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THE MACHINE TOOL INDUSTRY AND THE DEFENSE INDUSTRIAL BASE

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BEFORE THE

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THE MACHINE TOOL INDUSTRY AND THE DEFENSE INDUSTRIAL BASE

TUESDAY, JUNE 7, 1983

Congress of the United States,
Joint Economic Committee,
Washington, D.C.

The committee met, pursuant to notice, at 9:45 a.m., in room SR-232A, Russell Senate Office Building, Hon. Roger W. Jepsen (chairman of the committee) presiding.

Present: Senator Jepsen and Representative Holt.

Also present: Chris Frenze, professional staff member; and Jon Etherton, legislative assistant to Senator Jepsen.

OPENING STATEMENT OF SENATOR JEPSEN, CHAIRMAN

Senator Jepsen. The committee will be in order.

On July 22, 1982, I expressed my concern about the erosion of the domestic tool industry to my colleagues on the Senate floor. In my remarks, I pointed out:

> Machine tools are one of the most essential components of the defense industrial base. Not one plane can be made, not one missile produced without hundreds and thousands of intricate machine tools. Once we lose the domestic capability to build a given specialized machine tool, it could take as long as 18 months to restore that capability. It would take even longer before those newly produced machine tools could be used to produce the weapons we need in the event of a national emergency.

The greatest apparent threat to the maintenance of an adequate base of machine tool producers in the United States has been the increasing level of machine tools that are being imported into the United States. In 1981, 36 percent of the machine tools installed by American industry came from overseas; 30 percent of the machine tool dollars went for imports. Ten years ago, the market share for imports was only 7 percent; 5 years ago, it was 12 percent. Japan is producing the lion's share of machine tools coming into this country. Moreover, Japan's industry has concentrated on importing those categories of numerically controlled machine tools that are most critical to our national defense industries.

The machine tool industry in the United States, on the other hand, remains depressed. An article by John Byrne in the January 3, 1983, issue of Forbes described the situation as follows:

> Plant closings are widespread. Machine tool companies have shed nearly a quarter of their work force in the past year alone.

Now, those of us alarmed at the potential implications of these trends for national defense are questioning how this situation came about. There is compelling evidence that the Japanese Government is directly involved in the promotion of export activities of the Japanese machine tool industry through use of subsidization and by allowing the formation of industry cartels. At the same time, there are charges that American machine tool producers have not invested aggressively in research and development when the opportunities were available.

But whatever the reason for the present state of affairs, we must seriously examine whether our national security is being threatened by current industry trends, and develop appropriate responses.

Representatives of the machine tool industry have filed two petitions for relief under current U.S. law. The first petition, for relief under section 103 of the Revenue Act of 1971, was filed by Houdaille Industries in May 1982. Houdaille requested that the President deny the investment tax credit to certain purchasers of Japanese machine tools because of Japanese unfair trade practices. In a controversial decision, the administration rejected the petition in April 1983.

The National Machine Tool Builders' Association filed a petition under section 232 of the Trade Expansion Act of 1962 for import quotas on metal-cutting and metal-forming machine tools to 17.5 percent of domestic consumption for a 5-year period in the interests of national security. A working group of Government agencies, chaired by the Department of Commerce, will report findings and a recommendation on this petition on March 1984.

The purpose of today's hearing is to examine some of the national security concerns raised by the machine tool industry in their most recent section 232 petition. I hope that the Federal Interagency Working Group will consider some of these concerns in their investigation.

I will now yield to Congresswoman Holt for any remarks that she might have.

OPENING STATEMENT OF REPRESENTATIVE HOLT

Representative Holt. Thank you, Mr. Chairman. I certainly think this is a very important hearing that you have scheduled this morning. I am very pleased because those of us who have served on the Defense Authorization Committees certainly realize the critical situation in our defense industrial base, and I think it certainly is one we must take a long, careful look at.

We tend to shy away from protectionism, but I feel very, very strongly we have to compete on some kind of equal base with the countries that are developing the industrial bases.

I was interested at the Paris Air Show to see the only display the Soviet Union had was forgings, and I think that they are trying to tell us something, so I think this was very important, and I am delighted, and welcome our witnesses today.

Senator Jepsen. Thank you, Congresswoman Holt. I am pleased to welcome Ray Blakeman, president of the Iowa Precision Industries. I had the privilege and the honor recently of awarding the "E" star award to Blakeman's company for its outstanding achievements over the years; and also welcome Fred Arnold, Data Resources, Inc.; and John Latona of Houdaille Industries, Inc. And Jim Mack and Chuck Downer, welcome to you.

It is my intention to get more than one side of this issue, and I order that the record will be held open for a period of 2 weeks so that anyone wishing to submit a statement on this issue may do so.

If there is sufficient interest, we will have another hearing to allow others to present their views on this issue.

I would also advise the witnesses today that any prepared statement they have will be entered into the record as if read, so you may proceed in any manner that you wish, knowing that your statement will be entered completely in the record.

I now would like to ask Ray Blakeman to begin the panel's testimony. It was my recent privilege, as I said, to present Ray and his company, Iowa Precision Industries, with the Department of Commerce "E" star award for their great effort and their great achievements. Welcome to Washington, Mr. Blakeman.

STATEMENT OF RAYMOND H. BLAKEMAN, PRESIDENT, IOWA PRECISION INDUSTRIES, INC., CEDAR RAPIDS, IOWA, REPRESENTING THE NATIONAL MACHINE TOOL BUILDERS' ASSOCIATION, ACCOMPANIED BY JAMES H. MACK, PUBLIC AFFAIRS DIRECTOR, NMTBA, AND CHARLES DOWNER, INDUSTRIAL PREPAREDNESS REPRESENTATIVE, NMTBA

Mr. Blakeman. Good morning. My name is Raymond H. Blakeman. I am the president of a holding company that owns three machine tool companies. One is Ruesch Machine of Springfield, N.J.; the second is the Lockformer Co. of Lislie, Ill.; and the third is Iowa Precision Industries of Cedar Rapids, Iowa.

It might be of interest to you that none of these companies have any substantial direct foreign competition at the moment.

I am a former Air Force pilot and was involved in World War II for 3 years. I have been active in the machine tool industry for over 30 years and am currently a director of National Machine Tool Builders' Association, NMTBA, on whose behalf I am appearing this morning. Accompanying me today are James H. Mack, NMTBA's public affairs director; and Charles P. Downer, NMTBA's industrial preparedness representative.

NMTBA is a trade association consisting of over 287 American machine tool manufacturing companies, which produce approximately 85 percent of the machine tools made in the United States.

The critical importance of machine tools for industrial production and for our national defense cannot be gaged by the size of the industry itself. The total production of machine tools in the United States during 1982 was $3.67 billion, which represented 0.12 percent of the gross national product. The projected shipments in 1983 will drop to under $2 billion.

The economic behavior of the machine tool producers has been fundamentally affected by the cyclicality of their industry. Because of these cycles, the industry has tended not to invest in new capacity until the long-term need for such capacity becomes reasonably well established. To do otherwise would be to invest capital that would be unproductive during downturns in the industry's cycles and hence would produce, over the entire cycle, an inadequate return on investment. The industry has also sought to buffer its cycles by accumulating new orders during periods of strong demand and filling such orders during periods of slack demand. This policy minimizes layoffs of the skilled workers on which the industry depends and rationalizes production schedules. The result, however, has been that increases in new orders have been accompanied by lengthening lead times.

On March 10, 1983, NMTBA filed a petition under the national security provision of the trade laws with the Secretary of Commerce seeking trade relief in the form of quotas upon metal-cutting and metal-forming machine tools imported into the United States.

The national security clause reflects the longstanding policy of Congress that any advantages from international trade during peacetime must be subordinated to reasonable precautions for the national security. This policy, and the terms of the national security clause, are consistent with prevailing international law and are expressly acknowledged in article XXI of the General Agreement on Tariffs and Trade, GATT.

A review of the legislative history surrounding congressional adoption of the national security clause about 30 years ago impels one to the conclusion that the machine tool industry was precisely one of the industries Congress intended to protect through its enactment.

A strong industrial base that will support prompt mobilization and sustained fighting has substantial value as a tool for diplomacy and as a deterrent to war.

Without machine tools, industry cannot begin to produce the vastly increased quantities of military equipment that mobilization requires. Every ship, plane, tank, missile, transport vehicle, and other armament used by our Armed Forces, as well as essential elements of the supporting civilian infrastructure, are manufactured in large part on machine tools. Moreover, the production of sophisticated modern weapons increasingly requires high technology machine tools, because the computer controls on such tools can assure the precise tolerances necessary for successful operation of the finished product. Ever since World War I, Congress, the executive branch, and the Armed Forces have recognized the critical importance of machine tools to the national security.

Mobilization of the United States for World War I, World War II, and the Korean war required levels of machine tool production many times higher than the production that had been required to supply civilian demands before hostilities began.

In a future national emergency, the machine tool industry would once again be called on to respond vigorously at the outset of the emergency and to sustain vigorous performance for its duration.

Protection of the national security requires preparation for a protracted conventional war with the Soviet Union. Many Western experts on the Soviet Union believe that although the Soviet leaders have prepared for a protracted conflict, they have compelling reasons for wishing to avoid one. In the circumstances, the U.S. deterrence posture will be effective if—and only if—the United States is perceived by the Soviets as having the capacity both to deny them a quick victory and to wage a protracted war.

Our prepared statement documents that current machine tool import trends, if they continue unchanged, will almost certainly leave the United States with a machine tool industry that is smaller and weaker than can be prudently tolerated—an industry that is permanently debilitated and inferior. Such a development would be a serious impairment of the Nation's national security.

Ten years ago, imports accounted for approximately 11 percent of the metal-cutting machine tool market and 9 percent of the metal-forming machine tool market in the United States. The United States enjoyed a positive balance of payments with respect to machine tools. By 1982, these statistics had changed radically.

In 1982, the United States had a hefty deficit of $638.3 million in international machine tool trade. Imports' share of the U.S. market has grown an average of more than 2 percentage points per year to 27 percent, a 64-percent increase in market share.

The threat that imports pose to the domestic industry is especially ominous because the substantial competitive advantages that imports enjoy are attributable in large part to direct governmental subsidization or the effects of governmental coordination of machine tool producers. Our prepared statement documents these market-distorting governmental actions. Given the trade barriers recently erected or being considered by the European Common Market, it is probable that the Japanese production available for export will be further targeted at the large U.S. market.

Thus, the American machine tool industry is confronted with both a deep depression in demand, an almost unstoppable tide of subsidized imports, and a monstrous amount of machine tools overhanging the market in the form of huge domestic inventories of foreign machine tools. In these circumstances, imports pose a serious deterrent to new investment in the U.S. machine tool industry. Such investment is critically needed to improve the industry's productivity and capacity and to bolster its research and development efforts.

In the absence of such investment, the U.S. industry cannot maintain its technological prestige, which remains second to none in the world, but which is now being strenuously challenged. The practical effect of this debilitation would be to replace a significant part of the existing and potential machine tool production capacity in the United States with machine tool factories in foreign nations.

The critical question, therefore, is whether such displacement would threaten to impair the national security. In other words, could the United States count on foreign machine tool suppliers during a serious national emergency?

The answer is "No."

During a major protracted conflict, sea and air lines, which stretch 3,500 miles from the east coast of the United States to Germany, and 7,500 miles from the west coast to Japan, would be harassed or interdicted. Additionally, the machine tool production facilities in Asia and western Europe, particularly in Japan and the Federal Republic of Germany, could be subject to attack. Port facilities and internal transportation in those countries might be blocked or disrupted. Moreover, Japan, because of its proximity to the Soviet Union and distance from the United States, is vulnerable to intimidation.

In short, if a serious national emergency arises, there is a substantial risk that the supply of new machine tools, critical components, and spare parts for older machine tools from foreign sources would be radically reduced or completely halted just at the time that the demand in the United States for machine tools for military purposes would radically increase.

Given that fact, allies of the United States who are strategically exposed by reasons of geography should look with favor on U.S. policies that will strengthen deterrence. Moreover, a grant of relief under the national security clause in the compelling circumstances of the machine tool industry should not offend Japan, which has only recently justified the protection of some of its agricultural products on the ground that "national security would be endangered if the country were totally dependent on imported food."

There are, in addition, principles of fairness that favor the relief that NMTBA requests. Japan depends totally on, and has prospered awesomely from, the interests that the American military protects. Yet Japan contributes almost nothing toward that security, while its allies strain to find the money to keep abreast of military spending in the Soviet Union. It is therefore not unreasonable to expect Japan to bear the very modest burden of a grant of relief pursuant to the petition, which would strengthen the national security of the United States.

The threat to national security can be partially measured by the delay in mobilization that would be caused by the inadequate production capacity of the domestic machine tool industry.

The problem today, however, goes beyond mere delays and restricted production capacity. Sophisticated production processes, and sophisticated weapons systems, require nothing less than a domestic machine tool industry that is at least equal to the world's best. If imports continue to rise, the U.S. industry—long the world leader—is in danger of losing its technological edge along with its production capacity.

Thank you.

Senator **Jepsen**. Thank you.

[The prepared statement of Mr. Blakeman follows:]

PREPARED STATEMENT OF RAYMOND H. BLAKEMAN

I. INTRODUCTION

Good morning, my name is Raymond H. Blakeman. I am the President of Iowa Precision Industries, Inc., in Cedar Rapids, Iowa. I am a director of National Machine Tool Builders' Association (NMTBA), on whose behalf I am appearing this morning. Accompanying me today are James H. Mack, NMTBA's Public Affairs Director, and Charles P. Downer, NMTBA's Industrial Preparedness Representative.

NMTBA is a trade association consisting of over 287 American machine tool manufacturing companies, which produce approximately 85 percent of the machine tools made in the United States. On March 10, 1983, NMTBA filed a petition under the National Security provision of the Trade Laws (19 U.S.C. §1862) with the Secretary of Commerce seeking trade relief in the form of quotas upon metal-cutting and metal-forming machine tools imported into the United States. More specifically, NMTBA requests a five-year regime of quotas limiting imports in each of the two broad sectors of machine tools to 17.5% of domestic consumption, measured by value. To preserve the domestic industry's capability to produce the complete range of major types of machine tools, NMTBA further requests that separate quotas be applied within these broad sectors so that imports of specific types of machine tools cannot exceed twenty percent of annual domestic consumption of each of 18 product types. In establishing and applying the quotas, care must be taken to ensure that they cannot be circumvented by the importation of unassembled machine tools or component parts in quantities that would effectively undermine the relief granted.

NMTBA also suggests that the government may wish to consider implementing the quotas on a monthly or quarterly basis to minimize the risk that foreign producers will disrupt the market by shipping a full year's quota to the United States early in the year. Imports of machine tools of one or more of the 18 product types would be permitted at levels between 17.5 percent and 20 percent of domestic consumption so long as the level of imports of other types was less than 17.5 percent of domestic consumption, provided that the sales-weighted average value of imports did not exceed 17.5 percent of domestic consumption in either the metal-cutting or the metal-forming sector.

These levels of quotas are intended to achieve specific national security objectives -- restoration of the health of the domestic machine tool industry and expansion of its mobilization capability -- as discussed below. The quotas are expressed in terms of value, instead of units, to prevent foreign producers from effectively increasing their market share by concentrating their shipments to the United States in the highest-priced models.[1] It should be noted, however, that the quotas requested do not confine importers to any fixed dollar value of imports during the five-year period. Instead, they would allow importers to participate proportionately in any increase in U.S. consumption of machine tools.

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[1] Should it be proposed instead that the quotas be expressed in terms of units, it would be appropriate to divide the permitted number of units into different value categories.

II. DESCRIPTION OF THE MACHINE TOOL INDUSTRY

Machine tools are power-driven machines, not hand held, that are used to cut, form or shape metal. All machine tools can be broadly classified in either of the two principal families or sectors of machine tools: metal-cutting machine tools and metal-forming machine tools. These two sectors in turn encompass numerous types or categories of machine tools defined by their function and method of operation.

There are six basic categories of metal-cutting machine tools: drilling machines, milling machines, boring machines, turning machines (*i.e.*, lathes), grinding and polishing machines, and sawing machines. Additionally, there are various types of special purpose metal-cutting machines that are based on these categories. Examples are machining centers, which combine drilling, milling and boring operations, and gear-cutting machines, which are special purpose milling machines. Another example, station-type machines, are machines that perform different metalworking operations at a succession of locations or "stations."

There are also six basic categories of metal-forming machine tools: punching machines, shearing machines, bending machines, forging machines, die-casting machines, and presses.

Metal-cutting machine tools. Among the metal-cutting machine tools, turning machines are distinct in that they operate by applying a stationary cutting edge to a rotating workpiece held in a chuck or similar device for the purpose of manufacturing a round product. Milling machines employ a rotating "cutter" to cut the surface of a stationary workpiece. Drilling and boring machines cut holes of various sizes in a workpiece. Grinding and polishing machines employ a grinding wheel to remove metal from a workpiece that may be either round or flat. Sawing machines saw metal to a desired design or cut a piece of metal from rough stock for further work.

Metal-forming machine tools. Metal-forming machine tools shape metal by applying force to it. Punching machines stamp designs out of sheet metal with the use of cutting dies. Shearing machines cut sheet metal with a blade that is applied to the metal with force. Bending machines bend sheet metal into cylinders, arcs and angles. Presses apply great force to bend, cut or punch metal. Forging machines compress pre-heated metal into a desired shape using dies. Die-casting machines inject molten metal into a die set to produce a complex shape by casting.

Uses of machine tools. Machine tools are capital goods used extensively in manufacturing articles comprised substantially of metal. For example, each automobile, locomotive, airplane, farm machine, appliance and most articles of military hardware require substantial machining on machine tools.

Machine tools also have an important, albeit indirect, role in the manufacture of numerous nonmetal products. For example, the pipes, valves and tubes required for chemical refineries are made on machine tools, as are the machines used to weave textiles and to process timber into lumber and other finished-wood products. In short, machine tools make numerous products including other machines and are the fundamental element of industrial production.

Size of the industry. The critical importance of machine tools for industrial production cannot be gauged by the size of the machine tool industry itself. The total production of machine tools in the United States during 1982 was $3.6 billion, which represented 0.12 percent of the gross national product. The last Census of Manufactures shows that in 1977 the machine tool industry was made up of 1,285 companies comprising 1,345 establishments, with industry employment then totaling 83,200. Nearly two-thirds of the establishments had fewer than 20 employees. In both the metal-cutting and metal-forming sectors the 20 largest companies in the sector accounted for approximately 55 percent of sector shipments and the next 30 largest companies accounted for slightly over 20 percent of sector shipments. The industry is concentrated in the North-East and North-Central states.

Technological change. Like many other industries, the machine tool industry has been substantially affected by changes in technology and in manufacturing processes. These changes have implications for national security that are not, in the present state of affairs, reassuring. First, certain major customers of the machine tool industry have in recent years tended to order machine tools that are highly specialized in their uses and thus less easily adaptable to other uses. Such loss of flexibility harms our mobilization potential. Second, advances in technology have made it possible to produce sophisticated and more flexible machine tools (*e.g.*, computer- or numerically-controlled ("CNC" or "NC") machining centers) that are required to make many products (such as modern weapons systems) involving new kinds of metals, tighter tolerances and greater complexity. In these circumstances, any foreign threat to the United States' technological leadership carries with it the risk that our national security will become dependent on foreign technology and sources of supply.

For many decades it was common for machine tool users to order, and for machine tool manufacturers to build, machines that were customized to serve the buyer's specific needs. Because only a few machine tools were produced in lots for sale from inventory, machine tool builders generally did not begin to manufacture a machine until an order for it was received. Consequently, the manufacture of many machine tools was a craft requiring highly skilled labor, and it was generally accepted that substantial lead times were required for the production of most machine tools.

To a significant extent, the production of machine tools in the United States today still exhibits many of these same characteristics. The desire for maximum efficiency in manufacturing processes has led some of the major customers of the machine tool industry, such as the automotive, off-road equipment and farm-implements industries, to order machine tools designed for an unusually high degree of specialization or, in industry parlance, machine tools "dedicated" to the production of a particular end product. While these "dedicated" machine tools are highly engineered and efficient, they are not easily adaptable to other uses. In contrast to the situation existing at the beginning of World War II, for example, the majority of the machine tools used by automobile manufacturers today to produce pistons could not, without major redesigning and rebuilding, be used to produce shell casings. In short, in the event of a national emergency it will not be as easy as it was at the beginning of World War II to convert many existing machine tools from the production of civilian goods to the production of military hardware. This obviously has serious implications for the nation's ability to mobilize rapidly.

At the same time, high technology is being applied to commercial machine tools with accelerating frequency and proven success. This trend is revolutionizing the performance capabilities of machine tools, and it is also revolutionizing the way in which machine tools themselves are made. A continuing decline in the cost difference between NC machine tools and conventional machine tools indicates both that NC machine tools will account for an increasing share of machine tool consumption in the United States and that a growing percentage of the machine tools consumed in the United States in the future will be produced in series or lots rather than individually. In an expanding number of circumstances, it is economically sensible for machine tool users to purchase multi-purpose NC machine tools, or clusters of such machine tools, that are customized not primarily by mechanical alterations to the machine tool itself but rather by specific computer-software packages (*i.e.*, computer-aided manufacturing) or by the assembly of separate machine tool units into integrated manufacturing systems (so-called "flexible manufacturing systems").

Flexible manufacturing systems are not yet common in the United States and they also are not, despite their name, freely adaptable to a wide range of uses; their flexibility necessarily is limited by their software programs and by the considerable time and expense often required to write new programs. Nonetheless, the development of such increasingly sophisticated tools of production puts a premium on the domestic industry's ability to stay at the cutting edge of technological advances.

Cyclicality of demand. A longstanding characteristic of the machine tool industry that unfortunately shows no sign of changing is the extremely cyclical demand for machine tools. The level of orders for machine tools is determined primarily by industrial propensities to invest in capital goods; these propensities vary from sector to sector and from time to time. Financial and operating conditions, such as profitability, business confidence and the current and projected levels of capacity utilization, combine with changes in the economy-wide cost of capital and other factors to produce the complex lag relationship between demand on machine tool buyers and demand on machine tool builders. Fluctuations in demand and industry shipments have often been abrupt, as Figures 1, 2 and 3 show. Figure 3, showing the industry's shipments, includes the Department of Commerce's estimate of 1983 shipments.[1]

The economic behavior of machine tool producers has been fundamentally affected by the cyclicality of their industry. Because of such cycles, the industry has tended not to invest in new capacity until the long-term need for such capacity becomes reasonably well established. To do otherwise would be to invest capital that would be unproductive during downturns in the industry's cycles and hence would produce, over the entire cycle, an inadequate return on investment. The industry has also sought to buffer its cycles by accumulating new orders during periods of strong demand and filling such orders during periods of slack demand. This policy minimizes layoffs of the skilled workers on which the industry depends and rationalizes production schedules. The result, however, has been that increases in new orders have been accompanied by lengthening lead times.

Among other results, the industry's cycles have: (1) made a high debt-equity ratio imprudent, if not impossible, in light of the attitude of lending institutions toward debt-service coverage during downturns in the business cycle, (2) required the industry to offset losses during bad years by achieving or attempting to achieve compensatory profits during good years, and (3) restricted the industry's ability to expand its production rapidly in response to increases in new orders.

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[1] U.S. Department of Commerce, Bureau of Industrial Economics, 1983 U.S. Industrial Outlook for 250 Industries with Projections for 1987 (1983) (hereinafter 1983 Commerce Outlook).

The relatively small size of the companies comprising the United States machine tool industry and the constraints that its cyclicality imposes on their financing and operation have made this industry, and the enormous American market that it primarily serves, vulnerable to targeting by foreign governments. These governments have recognized, and have exploited, the competitive advantages that can be attained in this market by subsidized and governmentally-organized foreign companies.

III. IT IS A FUNDAMENTAL AND LONGSTANDING POLICY OF THE UNITED STATES THAT IMPORTS MUST NOT THREATEN TO IMPAIR THE NATIONAL SECURITY

The basis for our Petition is the National Security Clause of the United States trade laws, 19 U.S.C. § 1862, which serves as a nexus between the trade and national security policies of the United States. The Clause reflects the longstanding policy of Congress, that any advantages from international trade during peacetime must be subordinated to reasonable precautions for the national security. This policy, and the terms of the National Security Clause, are consistent with prevailing international law and are expressly acknowledged in Article XXI of the General Agreement on Tariffs and Trade ("GATT"). Indeed, it could hardly be otherwise, for no obligation of the federal government is more important than the protection of national security.

The National Security Clause's requirement that imports must not threaten to impair the national security is but one aspect of the more basic national policy to prepare in peacetime for the possibility of a future military conflict. In fact, this broader policy, as announced by the President, expressly provides for "increas[ing] the capability of industry . . . to meet national security needs through . . . use of import and export controls."[1] As the Secretary of Defense recently stated, support of "the national capacity to expand defense production rapidly during a crisis" is a task "to be undertaken with a high sense of urgency."[2]

Everyone hopes that the possibility of war of any kind with the Soviet Union and its allies is remote. But it cannot be denied that the possibility exists and that, in the face of that possibility, the government has -- as it has recently reaffirmed -- "[a] fundamental obligation . . . to provide for the security of the Nation . . . [by] hav[ing] an emergency mobilization preparedness program which will provide an effective capability to meet defense and essential civilian needs during national security emergencies."[3] It is national policy that such a preparedness program should "address the full spectrum of national security emergencies,"[4] including "a major military conflict."[5] In the same vein, the Secretary of

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[1] National Security Decision Directive Number 47 (July 22, 1982) p. 6.

[2] Annual Report of the Secretary of Defense to Congress, Fiscal Year 1983, p. I-11 (emphasis added). See also, Annual Report of the Secretary of Defense to Congress, Fiscal Year 1984, p. 115 ("We also recognize the vital role that industry must play in developing a capability to surge industrial production . . . for only when American industry has the capability to modernize and expand production to meet increased demands for weapons systems and supplies during times of emergency can we confidently face today's rapidly changing world conditions").

[3] National Security Decision Directive Number 47 (July 22, 1982) at 1.

[4] *Id*. at 3.

[5] *Id*. at 5.

Defense recently stated that "the United States must *be prepared to cope with threats across the entire spectrum of conflict*.[1]

Specifically, one of the President's recent National Security Decision Directives provides for an emergency-mobilization-preparedness program to "increase the capability of industry . . . to meet national security needs . . . .."[2] The Joint Chiefs of Staff have observed that "[a]ny major confrontation with the Soviet Union would place extraordinary demands on war materiel critical to sustaining U.S. forces. A strong industrial base, capable of rapid expansion, is therefore critical to both deterrence and defense."[3] Consistent with this, congressional policy, as expressed in the Defense Production Act, is that "[i]n view of the present international situation and in order to provide for the national defense and national security, our mobilization effort . . . requires the development of preparedness programs and the expansion of productive capacity and supply beyond the levels needed to meet the civilian demand, in order to reduce the time required for full mobilization in the event of an attack on the United States or to respond to actions occurring outside of the United States . . . .."[4] This is not a new idea; for many decades it has been recognized that prompt mobilization of the Nation's industrial base is a prerequisite for meeting national emergencies successfully.

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[1] Annual Report to Congress of the Secretary of Defense, Fiscal Year 1984, p. 37 (emphasis in original).

[2] National Security Decision Directive Number 47 (July 22, 1982) at 6.

[3] Organization of the Joint Chiefs of Staff, United States Military Posture For FY 1983, p. 53.

[4] 50 App. U.S.C. § 2062 (Supp. V 1981).

Indeed, a review of the legislative history surrounding Congressional adoption of the National Security Clause impels one to the conclusion that the machine tool industry was precisely one of the industries Congress intended to protect through its enactment.

Prospects for improved deterrence and international security are equally important to an investigation under the National Security Clause. A strong industrial base that will support prompt mobilization and sustained fighting has substantial value as a tool for diplomacy and as a deterrent to war.[1]

Relations with allied and uncommitted nations may become strained [if there] is the perception on the part of a foreign government that the United States may be unable to meet its international defense commitments."[2] With respect to unfriendly and aggressive countries, the Department of Defense has expressed particular concern with "how hostile nations perceive our resolve and ability to respond effectively to challenges."[3] Therefore, if the decisionmakers in the Executive Branch of the government are to maintain a prudent regard for the national security, as national policy requires, they must follow peacetime policies that assure the vitality of domestic industries that would be essential for a successful national mobilization.

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[1] Certainly Soviet military experts recognize the strategic importance of the strength of United States' industrial capability. See Sokolovskii, ed., Soviet Military Strategy, 3rd ed. (1968) trans. by Hariett F. Scott, pp. 108-109, 114; N. Ogarkov, "Na strazhe mirnogo truda" [On Guard for Peaceful Labor], Kommunist, No. 10, July 1981, pp. 82-83; K. V. Chicherin, "Mobilizatsiia" [Mobilization] Sovetskaia voennaia entsiklopediia [Sov. Military Encyclopedia], vol. 5, pp. 342-344 (1978); K.K. Belokonov, "Mobilizatsionnye vozmozhnosti gosudarstva" [Mobilization Potential of States], Sovetskaia voennaia entsiklopediia [Sov. Military Encyclopedia], vol. 5, pp. 340-341.

[2] Submission of the Department of Defense of February 26, 1979.

[3] Id.

Accordingly, the Secretary of Defense recently stated:

> "[We] cannot offer the American people and our allies a mere facade of security by deploying forces that . . . are not backed up by an adequate mobilization potential. . . . Our historic experience suggests that a major and acute crisis, threatening our national security, is likely to lead to a decision massively to expand our defense effort."

The National Security Clause is not only a fundamental part of the United States law and policy. It also reflects the prevailing law among nations. The relevant international law is found in Article XXI of the General Agreement on Tariffs and Trade.

The Friendship, Commerce and Navigation Treaties between the United States and most of its major trading partners, including Japan and the Federal Republic of Germany, contain similar provisions[1].

Moreover, the terms of the Clause are consistent with conventional politico-economic theory. Economists traditionally justify free trade as "a more efficient employment of the productive forces of the world."[2] The theory of comparative advantage, which underlies much of international economics, suggests that trade enhances the potential for world production by allowing countries to specialize in the production of certain items as to which they enjoy advantages and to give up production of items as to which they suffer disadvantages.[1] However, economists readily recognize that this model of international economic interdependence cannot apply to the extent that actual or potential political hostilities threaten to deny certain nations' access to the goods produced in other nations. In other words,

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[1] 4 U.S.T. 2063, 2078-79, T.I.A.S. No. 2863, Aug. 29, 1953 (United States-Japan); 7 U.S.T. 1839, 1863-64, T.I.A.S. No. 3593 (United States-Fed. Rep. of Germany).

[2] J.S. Mill, quoted in P.A. Samuelson, Economics 626 (11th ed. 1980).

> "economic welfare is not the sole goal of life. Political considerations are also important. Thus, it may be necessary to become partially self-sufficient in certain lines of activity, even at great cost, because of fear of future wars."[2]

In the absence of government subsidies or outright nationalizations, tariffs or quotas may be necessary to protect industries vital to national security. Although it is often argued that protectionism may reduce the wealth of nations, the failure to protect national security may be even more devastating. In the end, of course, marginal changes in national income are not the decisive factor. As Adam Smith observed in his discussion of commercial trade, "Defense is of much more importance than opulence."[3]

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[1] R.E. Caves and R.W. Jones, World Trade and Payments 25-31 (1973); C.P. Kindleberger, International Economics 19-37 (4th ed. 1968); P.A. Samuelson, Economics 626-49, 656 (11th ed. 1980).

[2] P.A. Samuelson, supra, at 652.

[3] A. Smith, quoted in C.P. Kindleberger, at 116.

IV. THE READY AVAILABILITY OF MACHINE TOOLS IS CRITICALLY IMPORTANT TO THE NATIONAL SECURITY

"Our Nation's security rests in large measure on machine tools."[1] A sufficient number of the right kind of machine tools is the critical prerequisite to industrial support for the military during a national security emergency. In other words, "machine tools . . . are the seed corn of armament as well as all other production."[2]

Without machine tools, industry cannot begin to produce the vastly increased quantities of military equipment that mobilization requires. Every ship, plane, tank, missile, transport vehicle and other armament used by our armed forces, as well as essential elements of the supporting civilian infrastructure, are manufactured in large part on machine tools. Moreover, the production of sophisticated modern weapons increasingly requires high-technology machine tools, because the computer controls on such tools can assure the precise tolerances necessary for successful operation of the finished product. Ever since World War I Congress, the Executive and the armed forces have recognized the critical importance of machine tools to the national security. Only recently, the government reemphasized this importance when reinstituting a "Trigger Order

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[1] Defense Production Act, Progress Report No. 13, Machine Tools, U.S. Congress, Joint Comm. on Defense Production, S. Rep. No. 1107, 82 Cong. 2d Sess. 1 (1952) (hereinafter Joint Committee on Defense Production Report No. 13). The introductory sections of the Report are reprinted in Appendix H.

[2] "The Machine Tool Fumble," Fortune, p. 56 (Jan. 1952).

Program" for the more rapid procurement of American-made machine tools in times of national emergency.[1]

A. Machine Tools Have Long Been Recognized as Essential to Military Production.

During World War I, the War Industries Board gave machine tools priority "A-6" within Class A. Class A was inferior only to "emergency war work of an exceptional and urgent nature." It comprised "all other war work; that is to say, orders and work necessary to carry on the war, such as arms, ammunitions, destroyers, submarines, battleships, transports, merchant ships, and other water craft, airplanes, locomotives, etc., and the materials or commodities required in the production or manufacture of same."[2] By an act dated June 28, 1940,[3] after President Roosevelt had declared a national emergency in response to the eruption of World War II in Europe, Congress authorized expedited procedures for the Navy's procurement of "naval vessels or aircraft, . . . and also for machine tools . . . ."[4] In support of this act, Representative Carl Vinson identified machine tools as "necessities of naval construction,"[5] and Captain C.W. Fisher, Director of Shore Establishments for the Navy

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[1] FEMA Forum, September 1982. The Trigger Order Program is discussed in detail at pages 184-87, infra.

[2] B. Baruch, American Industry in the War, A Report of the War Industries Board 279, 317 (1921).

[3] 54 Stat. 676 (1940), codified in 50 App. U.S.C. § 1152.

[4] Id.

[5] 86 Cong. Rec. H10648 (daily ed. May 28, 1940).

Construction Corps, testified that the Navy "needed machine tools to carry out this program of shipbuilding and enlarging the Navy . . .; we need a lot of machine tools and need them right away."[1]

In 1948, Congress declared a policy, which continues today, that "the future safety and . . . the defense of the United States" requires "a national reserve of machine tools . . . for production of critical items of defense material."[2] This policy was declared in an act requiring the government to maintain "an essential nucleus of Government-owned . . . machine tools . . . [to] be available for immediate use to supply the military needs of the Nation in the event of a national emergency."[3] W. John Kenney, Under Secretary of the Navy, emphasized that the legislation was needed because "machine tools . . . constituted one of the most serious bottlenecks experienced during the early stages of World War II."[4] Congressman Short commented that "at the beginning of the recent global conflict our production was held up for months due to the lack of a proper and adequate supply of machine tools. We had to have the machine tools first."[1] As a consequence, "the [machine tool] industry was the 'bottleneck of the defense program' from 1941 to 1944."[2]

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[1] Hearings on Bill to Expedite Naval Shipbuilding Before the Sen. Comm. on Naval Affairs, 76th Cong., 3d Sess. 60, 66 (1940).

[2] National Industrial Reserve Act of 1948, § 2, 62 Stat. 1225, codified in 50 U.S.C. § 451, as amended. This policy has been honored in the breach for the most part. See pages 177-84, infra.

[3] H.R. Rep. No. 1998, 80th Cong., 2d Sess. 2 (1948).

[4] Hearings on H.R. 6098 Before the Subcomm. on Organization and Mobilization of the House Committee on Armed Services, 80th Cong., 2d Sess. 6742 (1948).

Belatedly, after the Korean War heated up, "the machine-tool industry was given top priority status comparable to the other urgent defense programs . . . ."[3] Even so, "when the constantly increasing military requirements [were] superimposed upon [the] present national capacity, the total impact [was] well beyond the limits of our machine-tool industry in 1952."[4] Consequently, once again, "machine tools [were] the most serious bottleneck" in the United States' war production effort.[5]

In 1952, at the height of the rearmament program triggered in part by the Korean War, the Joint Committee on Defense Production of the Congress reported that "[o]ur Nation's security rests in large measure on machine tools. . . . Expanding military schedules must be met and reasonable levels of civilian production maintained. These goals can only be achieved as rapidly as the machine tool industry can build the tools."[1] Later that year, the Chairman of the Aircraft Production Board of the Defense Production Administration testified that "[t]he maintenance of a strong and healthy machine tool industry, operating at levels greatly in excess of its operation in July 1950 is indispensable for national security. . . . The machine tool industry is the heart and soul of any defense program, and as the types of weapons, planes, guns, and everything that we build become more and more complicated, that becomes more and more true. . . . Machine tools are just as much a material of war as an airplane engine, in fact more important because without them you can't make the engine."[2]

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[1] Id. at 6757 (emphasis added). The Secretary of Defense, James Forrestal, made the same point:

> "I know that the committee is well aware of the importance of a national reserve of plants and machine tools. A plan for industrial mobilization, which can be put into effect efficiently and on short notice, is fully as important as the maintenance of a powerful military force. Today, a war is not won or lost on the battlefields alone. . . . [A]n effective military establishment depends on many considerations, not the least of which is the industrial capacity necessary to fill the requirements for military supplies and equipment." Id. at 6736.

[2] Joint Committee on Defense Production Report No. 13, supra, at 6.

[3] Id. at 2, citing Office of Defense Mobilization Directive of July 9, 1951.

[4] Id. at 1.

[5] Id. at 2.

In 1955, with the Korean War only recently concluded, Congress had machine tools in mind when it enacted the National Security Clause on which this Petition is based. In the report of the House minority, whose views on the National Security Clause prevailed in the conference committee, the machine-tool industry was described as a "bulwark of our economic and military strength."[3] Precisely on the present point, the report observed that "France and Great Britain depended upon German machine tools before World War II. . . . We must not depend on foreign factories for our industrial mobilization base."[4]

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[1] Joint Committee on Defense Production Report No. 13, *supra*, at 1.

[2] Hearings on Machine-Tool Shortages Before the Sen. Select Comm. on Small Business, 82d Cong., 2d Sess. 54, 57 (1952).

[3] Trade Agreement Extension Act of 1955, H.R. Rep. No. 50, 84th Cong., 1st Sess. 30 (1955) (minority views consistent with Act).

[4] *Id*. (emphasis added).

In 1956 a Senate committee reported that "machine tools are the first order of priority in expanding defense production" and that "a healthy machine-tool industry is of itself a defense asset of the highest order."[1] The committee concluded that it is "essential . . . that all possible barriers to the expansion of the machine tool industry which can be anticipated be removed."[2]

In 1973, during floor debates on the Defense Industrial Reserve Act, which reenacted the provision in the National Industrial Reserve Act of 1948 for a machine tool stockpile, Representative Cleveland stated that "[t]he Nation needs these [machine] tools on a standby basis in the interests of our military strength."[3] Representative Mayne said that "the reserve of machine tools . . . would be immediately required to tool up American industry in a national emergency."[4]

Government policy today reaffirms the critical importance of machine tools to the national defense and security. The point was emphasized in congressional testimony last year by Louis H. Guiffrida, Director of the Federal Emergency Management Agency (FEMA). FEMA has the responsibility to plan for national mobilization in the event of a national emergency. Mr. Guiffrida stated that when

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[1] Machine-Tool Programs, S. Rep. No. 2229, 84th Cong., 2d Sess. 31 (1956).

[2] _Id_.

[3] 119 Cong. Rec. H12,215 (daily ed. Apr. 12, 1973).

[4] _Id_.

FEMA "attempted to identify some of the most important problems and issues facing the Nation if we had to reach full mobilization status quickly," it focused "special attention [on] several industrial sectors critical to mobilization . . . includ[ing] . . . machine tools. . . ."[1] FEMA subsequently recognized the critical importance of the machine tool industry by singling it out for the reinstitution of a "Trigger Order Program." Pursuant to that program, the government plans during the next two years to enter into tentative contracts with approximately one hundred United States machine tool builders for the purchase of specified types and quantities of machine tools.[2]

The Defense Acquisition Regulation[3] ("DAR") specifically recognizes that most types of machine tools and related products are considered "indispensable for national security or national defense purposes." Part 16 of Section VI of the DAR, promulgated on January 7, 1981, by the DAR Council, permits the Department of Defense, pursuant to the Trade Agreements Act of 1979,[4] to purchase goods made in certain foreign countries without regard to the restrictions of the

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[1] Reauthorization of the Defense Production Act: Hearings Before the Sen. Comm. on Banking, Housing and Urban Affairs, 97th Cong., 2d Sess. 6 (1982).

[2] FEMA Forum, September 1982. The Trigger Order Program is discussed at pages 184-87, _infra_.

[3] 32 C.F.R. Parts 1 to 39 (1982). This regulation, issued by the Department of Defense under the authority of the Armed Services Procurement Act and the Defense Production Act, was formerly known as the Armed Services Procurement Regulation.

[4] Public Law 96-39, 19 U.S.C. 2501 _et seq_. (Supp. V 1981).

Buy American Act or DOD's Balance of Payments Program (§ 6-1601(a) and (b)), except in the case of "purchases indispensable for national security or national defense purposes" (§ 6-1603(iv)). The regulation then lists fifty-eight categories of products that are generally not indispensible, and expressly excludes from this list twenty-one categories of machine tools and related products which, because of their use in the production of weapons, are deemed by DOD in applying the DAR to be "indispensible for national security" (§ 6-1607).[1]

In addition, government policy recognizes that certain high-technology machine tools are so essential for the production of state-of-the-art weapons that it has forbidden their export to

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[1] These categories are as follows (CCH Government Contracts Reports ¶ 37,620.18 (1983)):

Federal Supply Class Number	Supply Class Title
3408	Machining Centers and Way-Type Machines
3410	Electrical and Ultrasonic Erosion Machines
3411	Boring Machines
3412	Broaching Machines
3413	Drilling and Tapping Machines
3414	Gear Cutting and Finishing Machines
3415	Grinding Machines
3416	Lathes
3417	Milling Machines
3418	Planers and Shapers
3419	Miscellaneous Machine Tools
3426	Metal Finishing Equipment
3433	Gas Welding, Heat Cutting and Metalizing Equipment
3441	Bending and Forming Machines
3442	Hydraulic and Pneumatic Presses, Power Driven
3443	Mechanical Presses, Power Drive
3446	Forging Machinery and Hammers
3448	Riveting Machines
3449	Miscellaneous Secondary Metal Forming and Cutting Machines
3460	Machine Tool Accessories
3461	Accessories for Secondary Metalworking Machinery

adversaries of the United States.[1] Virtually all machine tools are important for the manufacture of weapons and other items used by the armed forces; the machine tools that are subject to export restrictions, however, incorporate technology that would permit the Soviet Union and its allies to construct weapons that are presently beyond their grasp.[2]

B. Considerations of Deterrence and Promptness of Military Response Require a Production Capacity Adequate to Satisfy an Immediate and Sharp Increase in the Demand for Machine Tools

Because machine tools are required to make so much of what the military requires, a demand for machine tools far greater than peacetime demand arises immediately when a serious national security emergency erupts and continues for a substantial period thereafter. For this reason, both the nation's strategy of deterrence and its ability to respond promptly to an actual emergency are critically dependent on domestic machine tool production capacity. The armed forces have long recognized that their war effort would be severely prejudiced if, as a result of inadequate machine tool production capacity, military production were delayed until machine tool factories were built or expanded. Machine tools are necessary for expanded defense production, and "our capacity for expanding defense production is of very great strategic importance. This capacity helps to deter precisely the aggressive moves that might lead to such an expansion, and it plays a critical role in our policy for a conventional war."[1]

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[1] See 15 C.F.R. Part 399 (1982), based on the Export Administration Act of 1979, Pub. L. No. 96-72, 93 Stat. 503.

[2] Thus, the Secretary of Defense has warned that the export of "precision machine tools" to the Soviets may jeopardize the national security by allowing them "to improv[e] their industrial base." Annual Report of the Secretary of Defense to Congress, Fiscal Year 1983, p. II-31. See generally Freedenberg, "U.S. Export Controls: Issues for High Technology Industries," National Journal 2190, 2191 (December 18, 1982) ("There is essential agreement that certain categories of high technology items should not be sold to the Soviets or their Communist allies").

Mobilization of the United States for World War I, World War II and the Korean War required levels of machine tool production many times higher than the production that had been required to supply civilian demands before hostilities began.

To a significant extent this surge in production was made possible by converting to the production of new machine tools many existing machine tools that had been used before the war for the production of civilian goods -- a conversion that may not be possible, at least to the same extent, today.[2]

In a future national emergency the machine tool industry would once again be called on to respond vigorously at the outset of the emergency and to sustain vigorous performance for its duration. Recently, for example, the Federal Emergency Management

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[1] Annual Report of the Secretary of Defense to Congress, Fiscal Year 1983, p. I-14.

[2] See generally J.S. Gansler, The Defense Industry 109-10 (1980):

> "The many people who still think the United States could quickly resume the rate of industrial military production that was present at the end of World War II neglect the increased complexity of today's military equipment. The production process is more difficult, the skill levels required are higher, the material lead times longer, the part tolerances much tighter, and the designs far more complex. They also neglect the long buildup time allowed by America's physical isolation from that war's beginnings in Europe. Thus, a critical question in the area of strategic industrial responsiveness is the likely intensity and duration of a future military conflict."

Agency recognized "the vast increase in demand for metal cutting machine tools [that occurs] during mobilization periods."[1]

Moreover, a future national emergency is likely to present mobilization problems considerably more difficult than those presented in the case of the world wars -- problems that underscore the need to keep the United States machine tool industry in a state of readiness during peacetime.

The Joint Chiefs of Staff have recognized that "[o]ur strategic forces must be ready to respond to an attack with only minutes of warning."[2] Similarly, the Secretary of Defense has stated:

> "[t]he outbreak of a new war probably will not allow this country the necessary time in which to expand its production equipment industries and tool up its military production plants, such as it enjoyed the First and Second World Wars. A real degree of national security, then, requires the establishment, prior to a theoretical [mobilization] day, of a substantial measure of industrial capacity to produce the munitions and implements of war."[3]

In other words, the nation's ability to make an adequate response to a national-security emergency is directly dependent upon the strength of the domestic machine tool industry. This principle is illustrated by a comparison of the responsiveness of the industry to the demands on it during World War II, which began when the industry was relatively strong, with its responsiveness to the demands of Korean War, which began when the industry was weak. "[A]t no time during [World War II], due to the industry actually becoming geared up almost 3 years before Pearl Harbor, did the backlog of unfilled orders exceed 12 months' production. As the demand increased, the capacity of the industry kept step with it. But even at that the industry was 'the bottleneck of the defense program' from 1941 to 1944."[1] By comparison, at the outset of the Korean War, "[m]ost of the tool industry had been hungry for business for 2 to 4 years and total employment was down to 37,000 workers -- the lowest in over a decade. Many plants had been forced to release even some of their most experienced men. Many plants were working short hours, cutting back in every way to break even."[2] As a consequence, in October 1951, sixteen months into the Korean War, the backlog of unfilled orders held by the machine tool industry was 24 months' production.[3] Three months later the Joint Congressional Committee on Defense Production proclaimed machine tools as "the No. 1 bottleneck"[4] and emphasized "the immediate urgency for the maximum output of machine tools."[5]

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[1] FEMA Forum, Sept. 1982, p. 1.

[2] Organization of the Joint Chiefs of Staff, United States Military Posture For FY 1983, p. 51.

[3] Report of the Advisory Committee on Production Equipment to the Director of Defense Mobilization, Jan. 12, 1953, reprinted at Hearings on Machine Tool Programs Before the Sen. Select Subcomm. on Small Business, 84th Cong., 2d Sess. 116 (1956).

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[1] Joint Committee on Defense Production Report No. 13, _supra_, at 6.

[2] _Id_. at 2-3.

[3] _Id_. at 29.

[4] _Id_. at 80.

[5] _Id_. at 2.

Simply put, the national security cannot tolerate the debilitation of the domestic machine tool industry.

C. It Must Be Assumed That The United States Would Need Massive Quantities of Machine Tools During a National Security Emergency in the Future.

Protection of the national security requires preparation for a protracted conventional war with the Soviet Union. The popular image of war with the Soviets -- "a single, very quick spasm exchange [of nuclear bombs] after which all is devastation and silence"[1] -- remains a possibility but a decreasing one. There is a significantly greater possibility today, in contrast to ten years ago, that a war with the Soviet Union, if it occurs, would be a conventional war of long duration rather than a conflict terminated at an early date by escalation to nuclear weapons. The key Department of Defense planning document, "Fiscal 1984-1988 Defense Guidance," has been reported as requiring that U.S. conventional forces should be able to fight Soviet forces on several fronts for an "indefinite period."[2] Moreover, "[e]very administration and every secretary of defense" since the Kennedy Administration has realized "that relying solely on a strategy of massive nuclear retaliation [is] not a credible deterrent to the wide range of nuclear and conventional attacks which the Soviets [have] develop[ed] the capability to conduct."[3] Thus an adequate deterrent posture requires the ability to fight a conventional war.

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[1] Seymour Weiss, "Why We Must Think About Protracted Nuclear War," The Wall Street Journal, Aug. 30, 1982, p. 12.

[2] "U.S. Arms Plans Bared," The Chicago Tribune, Jan. 17, 1983, p. 1.

[3] Letter, Caspar W. Weinberger, Secretary of Defense, The Washington Post, Nov. 9, 1982. p. A21.

The Soviet Union has recently achieved at least an equivalence of rank with the United States in strategic nuclear weaponry.[1]

From the standpoint of deterrence, many defense professionals believe that the credibility of the nuclear deterrent rests to an important degree upon the credibility of the conventional deterrent.[2] Consequently, the United States cannot any longer assume that its "nuclear umbrella" will compensate for deficiencies in local non-nuclear stopping power to deter a non-nuclear attack on America's vital interests in Europe or Asia.[3]

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[1] "The steady modernization of Soviet strategic offensive and defensive capabilities . . . has resulted in the loss of U.S. strategic nuclear superiority and increased uncertainty in U.S. capabilities to deter both nuclear and nonnuclear conflict." Organization of the Joint Chiefs of Staff, United States Military Posture For FY 1983, p. 26.

[2] See Kenneth Hunt, The Alliance and Europe: Part II: Defence with Fewer Men, Adelphi Paper No. 98 (London: IISS, Summer 1973), p. 20 and passim. There is general agreement among Western defense experts that the Soviet Union would place very high priority upon finding and destroying NATO's theater- nuclear weapons during a conventional phase to a European war. See Joseph D. Douglass, Jr., and Amoretta M. Hoeber, Coventional War and Escalation: The Soviet View (New York: Crane, Russak, 1981).

The Joint Chiefs of Staff continue to place emphasis on conventional forces in maintaining the military balance: "U.S. and allied conventional forces are maintained to defend vital interests, deter aggression, and promote stability. These are the most likely forces to be employed in actual conflict and thus bear much of the responsibility for deterring aggression. Loss of U.S. strategic nuclear superiority and the growing Soviet advantage in theater nuclear forces have further increased the deterrent responsibilities of U.S. and allied conventional forces." Organization of the Joint Chiefs of Staff, United States Military Posture for FY 1983, p. 30.

[3] See Henry Kissinger: "The Future of NATO", in Kenneth A. Myers, ed., NATO: The Next Thirty Years (Boulder, Colo.: Westview, 1980), pp. 3-14; "Nuclear Weapons and the Peace Movement", The Washington Quarterly, Vol. 5 No. 3 (Summer 1982), pp. 31-39.

In these circumstances, there are reasons to expect that the Soviet Union might not initiate anything resembling a full-scale nuclear war but would instead pursue its expansionist aims using the massive Warsaw Pact conventional forces available to it.

The government's preparations for defense in a conventional war can no longer be distorted by what the Secretary of Defense has called the "fallacy in recent defense policy regarding conventional warfare . . . that in planning our strategy and designing our forces we could rely on the assumption that a conventional war would be of short duration."[1]

The Secretary recently observed that:

> "given the Soviet Union's increased ability to sustain a prolonged war, we would be imprudent to prejudge the duration of such a U.S.-Soviet conflict. Preparing only for a 'short war' would not only weaken the credibility of our deterrent, it would also be imprudent because it would limit the ability of U.S. military forces to restore the peace should deterrence fail."[2]

Accordingly, the Secretary has instituted changes in our defense policy that emphasize "improved sustainability for U.S. forces, a strengthened capability to expand defense production, and appropriate changes in strategy and tactics . . . ,"[3] and the Department of Defense recently revised its Master Mobilization Plan to make appropriate plans for "a protracted multi-theater conflict."[1] The Secretary of Defense has stated that "[w]e have recently increased the emphasis on planning for a longer conflict that is fought on a global scale."[2]

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[1] Annual Report to Congress of the Secretary of Defense, Fiscal Year 1983, p. I-16.

[2] Annual Report to Congress of the Secretary of Defense, Fiscal Year 1984, p. 35.

[3] Id. at I-16 to I-17.

Many Western experts on the Soviet Union believe that although the Soviet leaders have prepared for a protracted conflict, they have compelling reasons for wishing to avoid one.[3] In the circumstances, the United States' deterrence posture will be particularly effective if, and only if, the United States is perceived by the Soviets as having the capacity both to deny them a quick victory and to wage a protracted war.

It is of course impossible to know whether a war with the Soviet Union and its Warsaw Pact allies will occur and, if it does occur, the form it will take. Certainty, however, is not required, or even expected, in the defense-planning process. It is sufficient that the government has recognized that there is a substantial possibility of a protracted, perhaps multi-theater, conventional war with the Soviets and has declared that it is national policy to prepare to meet that possibility. There can be no doubt that, if such a war took place, a vast number of machine tools would be required to fight it.

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[1] Id. at III-183.

[2] Annual Report to Congress of the Secretary of Defense, Fiscal Year 1984, p. 263.

[3] "Soviet military doctrine holds that if war breaks out in Europe, it must be won very quickly by the Soviet Union if it is to be won at all. If the war drags on, there is a high risk either that it will develop into a catastrophic strategic nuclear exchange or that the strains of war will destroy the Soviet Bloc from the inside. Either way, the social system established by the Communist Party would probably perish, and the present leadership would be killed. The Soviet leadership understandably would be unwilling to pay this price. It is probably unlikely, therefore, that the Soviet leaders would choose to start a war in Europe (or elsewhere) unless they were confident of a quick and complete victory." C.N. Donelly, "The Soviet Operational Manoeuvre Group: a new challenge for NATO", 15 International Defense Review, No. 9 pp. 1177-78 (1982).

V. THE PRESENT QUANTITY AND CIRCUMSTANCES OF IMPORTS OF MACHINE TOOLS THREATEN, AND WILL CONTINUE TO THREATEN, TO IMPAIR THE NATIONAL SECURITY

The recent, rampant growth in the share that imports hold in the United States machine tool market has set in motion a trend toward the debilitation of the United States machine tool industry; that in a time of serious national emergency, the United States could not count on foreign suppliers of machine tools; and that the government's only programs for assuring the availability of machine tools in a national emergency -- the Machine Tool Stockpile and the Trigger Order Program -- are clearly insufficient for that purpose.

If, the trend toward debilitation is permitted to continue, substantial existing machine tool manufacturing capacity will be effectively displaced from the United States to overseas locations that may not be accessible to us during a serious national security emergency. Equally threatening to the national security is the damage to the financial and competitive strength of the remaining portion of the United States machine tool industry, with the resulting damage to its ability to innovate and maintain its technological stature, that would occur if this trend continues. In short, current trends, if they continue unchanged, will almost certainly leave the United States with a machine tool industry that is smaller and weaker than can be prudently tolerated -- an industry that is permanently debilitated and inferior. Such a development would be a serious impairment of the nation's national security.

A. The Relevant Economic Data Show a Depressed Domestic Machine Tool Industry.

The United States machine tool industry is severely depressed. Current data on orders, shipments, employment, profits, capital formation and capacity utilization all point to the conclusion that the industry is experiencing unprecedented strains -- strains that cannot safely be assumed to be a result of the business cycle.

1. New orders. The leading indicator of the health of the machine tool industry is "net new orders," defined as aggregate new orders minus cancellations of outstanding orders. Machine tool orders are placed primarily by the metalworking industries during times when firms anticipate plant expansions or the replacement or upgrading of existing capital equipment. They form the basis for machine tool builders' plant utilizations, financial planning, capital outlays and manpower deployment.

Figure 4 shows the precipitous drop in the last four years in net new orders for machine tools. From the first quarter of 1979 through the fourth quarter of 1982, the constant-dollar value of net new orders plummeted by over 84 percent, reaching a level of $105 million as of the fourth quarter of 1982. The plummeting of the net new-order figures reflects the simultaneous occurrence of a dramatic reduction in the number of new orders placed and a sizeable increase in the cancellation rate on outstanding orders. To put this decline in perspective, net new orders for 1982 on a constant-dollar basis amounted to approximately half the value of orders placed in 1975, when the industry was at the bottom of its preceding business cycle.

2. Shipments. Similarly, as shown in Figure 5, the constant-dollar value (1972 dollars) of machine tool shipments has declined over the past three years from a peak of $503.5 millions in the fourth quarter of 1979 to a level of $266.8 million in the third quarter of 1982, the latest quarter for which data are available. This represents an aggregate decline of 47 percent.

The decline in value of shipments is less than the decline in value of net new orders during the same period only because the industry has been building and shipping machine tools to fill accumulated orders. As these outstanding orders have been filled, however, the industry's backlogs have been reduced, as Figure 6 shows, and future shipments will necessarily fall to a level corresponding to the low level of new orders. Conversely, when there is an upturn in net new orders, there will be a lag of several months before there will be a corresponding upturn in shipments.

The collapse in demand for domestic machine tools has had predictable adverse effects on the industry' health: among other things, employment has fallen dramatically and capital spending plans have been deferred or cancelled. Equally ominous for the future, the industry' profits, sustained until recently by shipments in fulfillment of outstanding orders, have now fallen or are projected to fall to the point that United States government financial analysts give the industry the lowest ranking of 212 industry groups for 1983 and private securities analysts are advising their clients to avoid investing in the industry. These adverse effects are discussed below.

3. Employment. Employment statistics are another indicator of the severity of the downturn in the machine tool industry. Figure 7 shows total industry employment annually for the years 1972 through 1979 and monthly for the years 1980 through 1982. In December 1975, at the bottom of the last recession, the total employment in the industry was 82,800. Five years later, at the peak of the next cycle in April of 1980, the industry's employment had grown to 110,200. Since then, however, employment has fallen sharply to 68,600 as of December 1982, the latest month for which figures are available. This represents a 37.7 percent decline in employment -- a loss of more than 41,000 jobs -- in less than two and one-half years. Total employment thus stands at a level substantially below the level that was reached at the bottom of the last cycle.

Figure 8 breaks out separately the industry's total employment of "production workers" annually for the years 1972 through 1979 and monthly for the years 1980 through 1982.

This category, which excludes employees engaged in sales, service and administrative occupations, includes the skilled machinists and other production employees whose training and experience are essential to any mobilization effort. Employment of those workers has fallen 46.2 percent from a peak of 73,700 in April of 1980 to 39,600 as of December 1982.

The decline in employment of production workers is proportionately greater then the decline in overall employment and has reached into the ranks of workers with relatively high levels of seniority and competence. Industry management is deeply concerned about the implications of this development for the industry's competitive position. The quality of the industry's products depends to a substantial extent on the competence of its production workers. Skilled production workers who are laid off and then find other jobs will be reluctant to return to a cyclical industry that is seriously threatened by imports. The training of replacement workers typically takes two to four years. In the meantime, production efficiency and product quality are likely to suffer, thereby further eroding the industry's competitive position.

Nor does the foregoing employment data fully reflect the depressed state of the domestic machine tool industry. Many workers who remain on the payroll are working short weeks; seven-hour days and four-day weeks, for example, are common.

4. Capacity utilization. The operating rate of capacity utilization rate measures "[t]he ratio of physical output to physical capacity."[1] Figure 9 records the operating rate for the nonelectrical machinery industry annually for the period 1972 through 1979 and monthly for the years 1980 through 1982 as reported in the long-standing McGraw-Hill surveys.[2]

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[1] The McGraw-Hill Dictionary of Modern Economics (2d ed. D. Greenwald 1973), p. 412.

[2] McGraw-Hill Publishing Company, Department of Economics, "McGraw-Hill Operating Rates Report" (monthly).

As Figure 9 shows, capacity utilization as of December 1982 was 62.2 percent, its lowest point in the history of index.[1] Understandably, numerous plants have been or are being closed, resulting in a permanent loss of production capacity. In the Cleveland area, for example, among major machine tool builders both Acme-Cleveland Corporation and Warner & Swasey Company (a subsidiary of Allied/Bendix) have recently closed plants and offered them for sale. Among other publicly-held companies, Ex-Cell-O Corporation and Cross & Trecker Corporation, both based in Detroit, have recently announced plant closings.

The nonelectrical machinery industry encompassed by the McGraw-Hill report is broader than the machine tool industry, but its operating rates are considered to be fairly representative of those experienced by the machine tool industry over a full business cycle.

5. Industry profits. Figure 10 shows the industry's pre-tax profits as a percentage of sales for the years 1972 through 1982.

Figure 11 shows for the years 1972 through 1982 the industry's pre-tax profits expressed as a return on gross assets. Figures 10 and 11 document the fluctuations in the industry's profits and the sharp drop in those profits in 1982. The profit outlook for 1983 is even worse.

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[1] In January 1983 the McGraw-Hill index dropped to a new all-time low of 62.1 percent.

The risks of investing in the machine tool business are reflected by the uncertainty of the industry's earnings performance over the years. Even under normal conditions, earnings fluctuations in this industry are greater than those experienced by manufacturing industries generally. With imports now holding a large and increasing share of the market, the risks of investing in the machine tool industry are accentuated. Unless the projected returns on investment are high enough to compensate for those risks, managers cannot justify decisions to reinvest. Conglomerate parent corporations engaged in other lines of business, will invest their capital elsewhere.

6. Capital investment. Not surprisingly, in view of the substantial decline in new orders, shipments and profits, the industry's constant dollar net capital investment fell off perceptible in 1982. As shown in Figures 12 and 13, the industry's net new investment in 1982 was inadequate even to cover the depreciation of existing plant and equipment, resulting in a decline in net plant and equipment on hand.

7. Research and development. Figure 14 shows the industry's aggregate expenditures for research and development for the years 1972 through 1981.

Figure 14 shows that the industry has held fairly steady through 1981 in its research and development expenditures. In the circumstances now facing the industry, however, it is far from clear that this will continue. Any significant decline in -- indeed, any failure to increase -- R&D expenditures would have ominous implications.

Given the rapid advances in technology that are affecting the industry and its customers, expenditures for research and development are the lifeblood of the machine tool business. To compete effectively in the domestic and export markets, the industry must retain the ability and the incentive to continue and increase its R&D expenditures. If the industry's sales and profits continue to decline, however, this will become impossible. The result will be a vicious circle in which declines in sales and profits will retard technological advances, causing further declines in sales and profits, with the cycle continuing until the industry has fallen irretrievably behind in foreign competitors. The risk that the domestic machine tool industry may thus be eclipsed by its foreign competition -- as other once-strong United States industries already have been -- has obvious importance for the national security.

8. Industry outlook. The Department of Commerce has ranked the machine tool industry dead last among 212 industry groups in its forecast of product shipments for 1983. According to the Department of Commerce, the constant-dollar value of shipments in 1983 of metal-cutting machine tools made by United States manufacturers is expected to decline to $950 million, which is 34.3 percent below the already severely depressed level of 1982;[1] similarly, shipments of metal-forming machine tools are expected to decline to $260 million, which is 30.1 percent below the 1982 level.[2] The Commerce Department expects these declines to result

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[1] Id. at 20-2 (shipments are expressed in 1972 dollars).

[2] Id. at 20-3.

in further layoffs in 1983 of 10.3 percent in the metal-cutting production workforce and 6.2 percent in the metal-forming production workforce.[1]

Notwithstanding the apparent end of the recent recession, the outlook for the machine tool industry bears out these gloomy projections. In 1982, overall business expenditures by manufacturers in the United States on new plant and equipment, such as machine tools, declined 6.9 percent below the real level of such expenditures in 1981.[2] Such expenditures declined by 8.2 percent in the case of manufacturers of durable goods -- which include many purchasers of machine tools -- and by 5.6 percent in the case of manufacturers of nondurable goods.[3] Significantly, United States manufacturers as a whole are still operating at just slightly more than two-thirds of capacity,[4] and "[t]raditionally, the upturn for machine tools comes when capacity use [in manufacturing industries] hits 80% . . . ."[5] As a result, real fixed investments by United States manufacturers are expected to fall another 5 percent during 1983.[6] The only leading economic indicator announced on March 2,

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[1] Id. at 20-2, 20-3.

[2] "Plant and Equipment Expenditures, Quarters of 1982 and First and Second Quarters of 1983," 62 Survey of Current Business 32 (December 1982).

[3] Id.

[4] Federal Reserve Statistical Release G.3(402) (December 1982).

[5] "Industrial Equipment and Services," Forbes, p. 130 (Jan. 3, 1983).

[6] "Plant and Equipment Expenditures, Quarters of 1982 and First and Second Quarters of 1983," supra, at 33.

1983, that continued to fall was "the level of contracts and orders for business plant and equipment."[1]

Even if the hoped-for decrease in world oil prices materializes and the promising economic news of the last two months matures into a strong and sustained national economic recovery, it is unrealistic to assume that the growth of the United States economy in 1983 will, by itself, bring new life to the machine tool industry. For the reasons stated earlier, the recovery of a capital goods industry like machine tools lags months behind a strong upturn from a recession. And, ironically, a strong economic recovery among the manufacturing industries that are the primary purchasers of machine tools may not benefit the United States machine tool industry in 1983. This follows from the enormous inventories of imported machine tools presently sitting in United States warehouses.

If, in response to a buoyant economy, machine tool purchasers seek immediate delivery, they will obviously prefer imports that can be delivered from stock. United States machine tool builders, by contrast, are financially unable, for the most part, to manufacture and carry substantial machine tool inventories. In short, there is a real danger that imports may enjoy the lion's share of the economic recovery, at least in the short term, and in the process expand their share of the United States market even further.

Moreover, in 1983 the United States machine tool industry cannot expect to compensate for the anticipated serious decline in domestic sales by expanding its exports to foreign markets. In 1982 the export market for United States machine tools weakened considerably due to world-wide economic stagnation and a strong U.S. dollar. Exports of approximately $615 million in 1982 were off by 40 percent in comparison with 1981, a decline even greater than the decline in the industry's overall shipments. Most forecasters project little or no growth in the economies of the industrialized Western nations during 1983. Consistent with this, the Department of Commerce estimates that exports of United States machine tools will decline by more than 30 percent in 1983.

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[1] Washington Post A12 (March 3, 1983) (citing U.S. Department of Commerce, Composite Indexes of Leading, Coincident and Lagging Indicators).

B. Imports Threaten Further to Debilitate the United States Machine Tool Industry and to Shift the Facilities for Production of Machine Tools Required by the United States to East Asia and Western Europe.

While precipitate declines in demand are not new to the machine tool industry, the recent explosion in imports' share of the United States machine tool market makes the present, extremely deep trough in the industry's cycle far more threatening to the industry's viability than any previous trough, for the reasons that follow.

1. Current import trends will result in a critically weakened industry.

Ten years ago imports accounted for approximately 11.0 percent of the metal-cutting machine tool market and 9.0 percent of the metal-forming machine tool market in the United States.[1] The United States enjoyed a positive balance of payments with respect to machine tools as a result of the domestic industry's export of $350.5 million worth of tools to foreign customers compared with imports of $167.1 million.[1] By 1982 these statistics had changed radically. See Figures 15 and 16.

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[1] NMTBA, Economic Handbook of the Machine Tool Industry, 1982-83, Chapters 4 and 5.

By October of 1982, imports had grown to 27.8 percent of the metal-cutting market and 22.9 percent of the metal-forming market in the United States, and for the full year 1982 the United States had a hefty deficit of $638.3 million in international machine tool trade. As Figure 15 shows, since 1977 imports' share of the United States market has grown an average of more than two percentage points per year from 16.5 percent to 27.0 percent, a 64 percent increase in market share. Figure 16 shows the shift in the United States' trade balance in machine tools from a surplus up to 1977 to a deficit thereafter. The primary source of import growth is Japan, whose share of the total United States machine tool market for the first nine months of 1982 was 12.3 percent and whose share of the imports sold in the United States market amounted to over 44 percent.[2] Other significant foreign sources of supply include West Germany, the United Kingdom, Taiwan and Switzerland, as shown in Figure 17.

In the absence of the relief requested in our Petition, imports will continue to capture an increasing share of the

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[1] Id., pp. 128 and 136.

[2] The Japanese share of the world export market for machine tools was 13.4 percent in 1982. American Machinist Magazine (February 1983). Thus the Japanese share of exports to the United States was more than three times greater than its world average.

United States machine tool market. The Commerce Department's forecast for 1983 shows a market share increase of 6.9 percentage points for imports of machine tools. Our petition projected a more conservative two percentage point growth in import mark[illegible]hare.

The foregoing statistics show the recent explosion of imports in the United States market. As alarming as they are, however, these statistics significantly understate the extent of the threat to the United States machine tool industry. As mentioned earlier, the machine tool industry today is being revolutionized by the marriage of high technology, especially computers, with the mechanical elements of conventional machine tools. Such numerically-controlled or computerized ("NC" or "CNC") machine tools are the principal growth sectors of the industry. As they continue to decrease in cost relative to conventional machine tools, demand for NC and CNC machine tools will continue to supplant the demand for conventional machine tools.

Although NC machine tools were for the most part developed and introduced to world markets by United States builders, foreign builders have been able to reap a substantial share of the profits. Largely as a result of reverse-engineering and governmental support in the form of aggressive targeting programs, the Japanese alone "have seized a third of the growth segment of the [United States] machine-tool market -- sophisticated, numerically controlled lathes and machining centers."[1] For the full year 1982, Japan supplied 80.6

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[1] "The Vise Tightens on Toolmakers," Business Week, Dec. 6, 1982, p. 63.

percent of all NC turning machines and 89.0 percent of all machining centers imported into the United States.[1]

As in the case of many other products, the manufacture of high technology machine tools involves an important "experience curve" phenomenon. As production increases, the experience curve -- reflecting, among other things, cost reductions and quality improvements -- rises sharply.[2] If foreign manufacturers of "high technology" machine tools are able to increase their cumulative production experience by dominating the United States market during the next several, critical years, the result may be an unchallengeable lead in cost reduction and new product development.

2. The domestic industry has been disadvantaged by international trade practices.

Imports appear to have a secure hold on the major share of the United States market that they have recently captured. Indeed, their share of the United States market is continuing to grow even when lead times of domestic producers have dropped and capacity has become available. The threat that imports pose to the domestic industry is especially ominous because the substantial competitive advantages that imports enjoy are attributable in large part to direct governmental subsidization or the effects of governmental coordination of machine tool producers.

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[1] *See* Department of Commerce, Import Report IM146 (monthly).

[2] *E.g.*, I. Magaziner and R. Reich, Minding America's Business, The Decline and Rise of the American Economy 89-90 (1982); Paine Webber Mitchell Hutchins Inc., "Machine Tool Industry: Is There Life After Detroit?" 4 (December 6, 1982).

The Government of Japan has been particularly aggressive in its protection, subsidization and support of local industries. The policy and activities of the Japanese Government of "targeting" the United States machine tool market and protecting and specially benefiting Japanese machine tool builders have been extensively documented. The Japanese Ministry of International Trade and Industry ("MITI") has worked closely with the Japan External Trade Organization ("JETRO"), the Japan Machinery Exporters' Association ("JMEA"), the Japan Society for the Promotion of Machine Industry ("JSPMI"), the Japan Development Bank ("JDB"), the Japan Bicycle Rehabilitation Association ("JBRA"), the Japan Motorcycle Rehabilitation Association ("JMRA"), the Japan Machinery Industry Federation ("JMIF"), the Japan Machine Tool Manufacturers Association ("JMTMA") and other public, quasi-public and private organizations in sponsoring and directing programs that have specifically benefited Japanese machine tool builders. Examples of such programs and activities include:

-- promotion of the Japanese machine-tool cartel with explicit exemption from the Antimonopoly Law of Japan;[1]

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[1] The Japanese machine-tool cartel was formed in response to Japan Law No. 154 of June 15, 1956, Extraordinary Measures Law for Promotion of Machinery Industry. In addition to Law No. 154 of 1956, Japan has enacted two other special laws granting antitrust exemptions and special protections to the machinery industry: Law No. 17 of 1971, Extraordinary Measures Law for Promotion of Specific Electronic Industries and Specific Machinery Industries; Law No. 84 of 1978, Extraordinary Measures Law for Promotion of Specific Machinery and Information Industries.

- -- subsidization of the Japanese machinery industry with funds in excess of $800 million a year from proceeds of wagering on races sponsored by JBRA and JMRA;[1]
- -- preferential loans by JDB to Japanese machine tool builders, primarily for research and development and sales promotion, including below-market interest rates and government guarantees;[2]
- -- special tax concessions for Japanese machine-tool capital expenditures, including an accelerated depreciation program designed specifically to subsidize high-technology NC machine tools;[3]
- -- technical research and development assistance to Japanese machine tool manufacturers provided by the Technical Research Institute of JSPMI;[4]
- -- promotion of the export of Japanese machine tools by JETRO and JMEA.[5]

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[1] Letter dated November 10, 1982, to Donald deKieffer, General Counsel to the United States Trade Representative, from Houdaille Industries, Inc. See also Comments by Houdaille Industries, Inc., on the Section 103 Petition.

[2] GAO Japan Report, supra, at 30-33, 60-63; I. Magaziner and T. Hout, supra, at 92-94. See Comments submitted by Cincinnati Milacron to the International Trade Commission.

[3] GAO Japan Report, supra, at 45-46, 61-64. See Comments submitted by Cincinnati Milacron, supra, Appendix 4.

[4] Comments by Houdaille Industries, Inc., on the Section 103 Petition, supra, at 21-30.

[5] I. Magaziner and T. Hout, supra, at 95-100. See Comments submitted by Cincinnati Milacron, supra, at 39-41.

The Japanese policy of actively protecting and promoting its machine tool industry has facilitated Japan's penetration of the United States market. Japan's share of the United States import market has more than doubled since 1976 from 21 percent to 44 percent, accounting for $529.2 million of sales in 1982.[1] The numerically-controlled machine tool sector has been especially hard hit by Japanese targeting practices, with Japan's share of the United States market increasing by 38.8 percent since 1980.[2] The United States Senate, in a "sense of the Senate" resolution, recognized that Japanese targeting practices have sought "domination" of the United States "high-technology industry in numerically-controlled machine tools" and that such practices are "a consequence of the discriminatory acts and policies of the Government of Japan."

The problems of United States machine tool builders have been exacerbated even further by the misalignment in the exchange rate between the dollar and the yen. There are indications that Japan has been pleased to tolerate the undervaluation of the yen in order that Japanese products might enjoy comparative price discounts in the United States.[3] The undervaluation of the yen and other foreign currencies has also hurt the sales of United

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[1] NMTBA monthly Import and Export Reports, based on U.S. Department of Commerce, Bureau of the Census, IM146 and EM522.

[2] Id., U.S. Dept. of Commerce, "Current Industrial Reports, Series MQ-35W, Metalworking Machinery" (Quarterly and Annual Summaries).

[3] See generally, Fair Practices in Automotive Products Act: Hearings Before the Subcomm. on Trade of the House Ways and Means Comm. 97th Cong., 2d Sess. 779 (1982) (statement of Beryl W. Sprinked, under Secretary of the Treasury for Monetary Affairs).

States industrial manufacturers that are major customers of the United States machine tool industry. The result has been directly and indirectly to reduce the domestic demand for United States machine tools.[1]

The vigor of the Japanese campaign to dominate the United States machine tool market is revealed by the continued high level of Japanese shipments to the United States during the early part of 1982 even in the face of sharply declining domestic demand. As a result, the Japanese industry has amassed within the United States an inventory of NC machine tools that, according to Forbes magazine, contains an estimated "5,000 [to] 10,000 units worth as much as $500 million."[2] The Department of Commerce has also reported that "several thousand unsold Japanese machine tools remain stored in the United States, await[ing] a resurgence in U.S. demand."[3] Even the Japan Machine Tool Builders' Association has acknowledged that 2,500 of the 3,878 numerically-controlled lathes and 1,000 of the 2,180 machining centers shipped to the United States in 1981 are considered to be inventories.[4] Based on recent rates of production by the United States machine tool industry, inventories at the levels acknowledged by the Japanese association would represent approximately one and one-half years' production of NC lathes and almost nine months' production of machining centers.

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[1] See, Statement of Lee L. Morgan, Chairman, Task Force on International Trade and Investment, The Business Roundtable, on the Yen/Dollar Problem, before the Subcomm. on Trade of the House Ways and Means Comm. (November 30, 1982).

[2] "Industrial equipment and services," Forbes, Jan. 3, 1983, p. 130.

[3] 1983 Commerce Outlook, supra, at 20-1.

[4] American Metal Market/Metalworking News, June 28, 1982, p. 17.

The reason for the buildup of Japanese inventory in the United States is unknown. The buildup may represent an attempt by the Japanese to administer a coup de grace to the domestic industry when the demand for machine tools finally revives. At that time, the Japanese -- who will have absorbed inventory carrying charges entirely beyond the reach of United States manufacturers -- will be able to satisfy orders instantly from stock, while American producers will have to scramble to rehire their work force before they begin to produce machine tools to fill new orders. The competitive advantange is obvious. Alternatively, the Japanese may have manufactured machine tools for which there was no current demand simply to achieve production experience and the cost savings that it produces, or to bolster Japanese employment.

Whatever the reason for the inventory buildup, there is cause for concern that the Japanese will emphasize even more than in the past the United States machine tool market. Given the trade barriers recently erected or being considered by the European Common Market,[1] it is probable that the Japanese production available for export will be targeted at the large United States market.

The American machine tool industry therefore is confronted with both a deep depression in demand and a "monstrous amount of machine [tools] overhanging the market" in the form of huge domestic inventories of foreign machine tools.[1] In these circumstances imports pose a serious deterrent to new investment in the United States machine tool industry. Such investment is critically needed to improve the industry's productivity and capacity and to bolster its research and development efforts. In the absence of such investment, the United States industry cannot maintain its technological prestige, which remains second to none in the world, but which is now being strenuously challenged.

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[1] "Fortress Europe Raises the Drawbridge," The Economist, Dec. 11, 1982, p. 47; The Economist, Feb. 19, 1983, p. 48.

The recent shift of demand to foreign machine tools, coupled with the current depression in the machine tool industry, with the resulting layoffs, plant closings and other cutbacks, has had predictable effects on the production capacity of the United States machine tool industry. As in the case of other industries, investment in new machine tool production capacity tends to follow increases in demand for the industry's products. To the extent that demand is diverted to foreign suppliers, investment in new domestic production capacity has been and will continue to be deterred.

C. In a Major National Emergency, the United States Could Not Count on Foreign Machine Tool Suppliers.

Imports of foreign-made machine tools seriously threaten to further debilitate the American machine tool industry. The practical effect of such debilitation would be to replace a significant part of the existing and potential machine tool production capacity in the United States with machine tool factories in foreign nations. At present, displacement would occur in favor of Japan and, to a lesser extent, the European Community; in the foreseeable future, there may be additional displacement to South Korea and Taiwan. The critical question, therefore, is whether such displacement would threaten to impair the national security. In other words, could the United States count on foreign machine tool suppliers during a serious national emergency?

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[1] Also overhanging the market is a large quantity of relatively new, second-hand tools repossessed from financially troubled companies. Business Week, Oct. 18, 1982, p. 47.

The answer is no. The United States military has long sought to avoid "an unwanted reliance on overseas producers . . ., the worst effect of [which] . . . is that, if foreign supplies were denied to the United States during a mobilization emergency, the Government or private industry would have to recreate the productive capacity, with an attendant loss of time."[1] For the reasons stated above, if a serious military emergency occurs, it would probably be a conflict with the Soviet Union, and it is increasingly possible that such a conflict would be a protracted, possibly multi-theater, conventional war.

During such a war, sea and air lanes, which stretch 3,500 miles from the East Coast of the United States to Germany, and 7,500 miles from the West Coast to Japan, would be harassed or interdicted. As the Department of Commerce recently recognized, "under a full mobilization condition [transoceanic] shipping losses are estimated to be extensive."[1] The Secretary of Defense recently reported that "[t]he Soviet Union's greatly improved fleet gives it a capability to conduct an interdiction campaign against our shipping and naval forces in the Atlantic, Indian Ocean, and Northern Pacific. Soviet attack submarines and missile-equipped bombers would constitute a major threat in such a campaign, with missile-equipped bomber aircraft being particularly a threat in the Northern Atlantic, Arabian Sea, and Northern Pacific."[2]

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[1] Report of Joint Comm. on Defense Production, 95th Cong., 1st Sess., Civil Preparedness Review, Part I, Emergency Preparedness and Industrial Mobilization 61 (Comm. Print 1977).

Additionally, the machine tool production facilities in Asia and Western Europe, particularly Japan and the Federal Republic of Germany, could be subject to attack. Port facilities and internal transportation in those countries might be blocked or disrupted. Moreover, Japan, because of its proximity to the Soviet Union and distance from the United States, is vulnerable to intimidation. In short, if a serious national emergency arises, there is a substantial risk that the supply of new machine tools, critical components, and spare parts for older machine tools, from foreign sources would be radically reduced or completely halted just at the time that the demand in the United States for machine tools for military purposes would radically increase.

1. Japan. Tokyo lies only 700 miles from a major concentration of Soviet air and naval forces near Vladivostok, across the Sea of Japan; other parts of Japan are even closer. The

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[1] Investigation of Imports of Glass-Lined Chemical Processing Equipment, 47 Fed. Reg. 11,746, 11,753 (1982).

[2] Annual Report to Congress of the Secretary of Defense, Fiscal Year 1984, p. 26.

Soviet Pacific Fleet, based in Vladivostok, includes approximately 120 deployed attack submaries, 80 deployed surface combat ships, and 300 fighter aircraft.[1] Long-range bombers are based nearby.[2] On the Soviet east coast there are "three times as many fighters . . . . 'as the United States has in the entire Pacific air forces,'"[3] and "[i]n each of the past three years, [the Soviets] have added more aircraft in the Pacific than the total U.S. Air Force planes in the region."[4] The 46,000 troops, several warships and aircraft that the United States has stationed in Japan do not counter-weight the strength of the Soviet forces nearby.[5] In fact, "U.S. naval forces in the Pacific, because of expanded commitments in other regions such as Southwest Asia, have been reduced to a post-World War II low. Our warships and submarines in the Pacific are about half of the 1965 level. The nuclear balance in the region has also shifted in favor of the Soviet Union."[6] "Whereas the U.S. could once deter the Soviets globally by itself, we can no longer go it alone," according to

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[1] The Washington Post, Nov. 4, 1982, p. A32.

[2] Annual Report of the Secretary of Defense to Congress, Fiscal Year 1983, Attachment: "Soviet Military Power" at 7.

[3] The Washington Post, Oct. 1, 1982, p. A4, quoting "an Air Force spokesman."

[4] The Wall Street Journal, Nov. 22, 1982, p. 17, quoting Admiral Robert Long, Commander in Chief of U.S. Pacific Forces.

[5] "Today the Soviet Union is capable of pursuing a broad range of sophisticated sea-denial missions ranging from anticarrier operations to interdiction of [United States sea lines of communication]." Organization of the Joint Chiefs of Staff, United States Military Posture for FY 1983, pp. 44-45.

[6] Report of the Secretary of Defense of Congress, Fiscal Year 1983, p. II-21.

Admiral Robert Long, commander-in-chief of U.S. forces in the Pacific.[1] America's ability to protect Japan is further clouded by the substantial possibility that, in the event of a war in Europe or the Persian Gulf area, the United States almost certainly would be required to swing at least some of its Pacific forces to the European theater.

Japan's contributions to its own defense are inadequate. "The Japanese military consists of a localized 'self-defense force' . . . whose combined air, maritime and ground components total scarcely a quarter million men. . . . [It] has a minuscule, coastal defense navy whose entire tonnage is less than that of three American aircraft carriers, and whose principal combat ships are 48 small destroyers and 14 submarines."[2] Japan's military goal is only to "turn back 'limited and small scale aggression' as envisioned in the country's 1976 basic defense plans."[3] It has not yet realized even this limited objective. The Secretary of Defense has stated that today the Japanese forces "would have difficulty defending Japan,"[4] and that "Japan will have to do a very great deal more than they are now doing to fulfill this entirely self-defensive role."[5] America's commander-in-chief of Pacific forces is more blunt: "In my judgment, they lack the ability to handle even a minor contingency."[1] Mr. Osamu Kaihara, a former deputy director of the Japan Defense Agency, stated that "[w]e have just a skeleton -- no real capability to fight."[2] The Economist recently dismissed the Japanese Self Defense Forces as a "defense system befuddled by the wrong rules and organization".[3] Consistent with this, the Under Secretary of State for Political Affairs has stated that "the Japanese should be doing more than they are now doing."[4] Not surprisingly, The Wall Street Journal reports that "[c]ritics say [Japanese] force-level projections adopted in 1976 were adequate then but aren't now, haven't been attained anyway, and won't be reached even by 1987 with currently projected spending."[5]

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[1] The Wall Street Journal, Nov. 22, 1982, p. 1.

[2] The New York Times, Jan. 4, 1982, p. 11.

[3] The Washington Post, Feb. 28, 1982, p. B2.

[4] The Washington Post, Mar. 26, 1982, p. A28.

[5] The Washington Post, Nov. 4, 1982, p. A32.

Japan, however, has persistently refused to expand its armed forces at anything more than a "glacial pace."[6] It has instead followed "an unwritten but widely accepted government guideline that defense outlays not be allowed to go beyond 1 percent of the country's gross national product."[7] Notwithstanding its ability to pay more.[1] and the United States' exhortations that it do so, Japan will spend only $11.11 billion for military purposes during the current fiscal year ending March 31, 1983.[2] That amount represents 0.93 percent of Japan's gross national product,[3] and only a four percent increase in real terms over the amount spent during the previous year.[4] According to Japanese defense officials, Japan's new five-year plan will probably keep defense spending at approximately one percent of GNP.[5] Consistently with their forecast, Japan has budgeted only $11.83 billion for defense during the 1983 fiscal year.[6] This paltry and "strategically aimless"[7] increase "will make it 'substantially impossible' to meet government weapons procurement plans outlined in the five-year program to begin next year" and will "create delays in purchasing the front-line military hardware necessary to keep plans to expand defense capabilities on track."[1]

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[1] The Wall Street Journal, Nov. 22, 1982, p. 17.

[2] Id.

[3] "Kamikaze Pacifists," The Economist, Dec. 18, 1982, p. 12.

[4] Hearings on Department of Defense Authorization for Fiscal year 1983 Before the Senate Comm. on Armed Services, Cong., Sess. 1204 (1982) (statement of Lawrence Eagleburger). Similarly, Assistant Secretary of State John Holdridge was recently quoted as saying that "[w]e believe Japan can, and should, do more in the field of defense." The Wall Street Journal, Nov. 29, 1982, p. 27.

[5] The Wall Street Journal, Nov. 22, 1982, p. 17.

[6] The Washington Post, Dec. 30, 1982, p. A1.

[7] The Washington Post, July 24, 1982, p. A1; Id., Mar. 26, 1982, p. A28.

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[1] Quoting "a Pentagon official," The New York Times reported that "'Japan is the only major industrialized nation that is spending less than it can afford' on defense." Id., Jan. 4, 1982, p. 11. Elsewhere, the Secretary of Defense has observed that Japan has "the free world's second largest economy [but] eighth largest defense budget." Annual Report of the Secretary of Defense to Congress, Fiscal Year 1983, p. II-21. See also page 232, infra.

[2] The Wall Street Journal, Dec. 30, 1982, p. 9. By comparison, the United States' military budget for 1983 is $216 billion. The New York Times, Mar. 27, 1982, p. 3.

[3] The Washington Post, July 24, 1982, p. A1.

[4] The New York Times, June 10, 1982, p. 3; Testimony of Frank Carlucci III, Deputy Secretary of Defense, Hearings on Department of Defense Appropriations, Sen. Appropriations Committee Subcommittee on Defense, Apr. 21, 1982. The most that can be said about the small increase in Japan's military budget is that the Japanese "are beginning to move, but it is at a pace that is slower than you and I would find acceptable." Id.

[5] The Washington Post, July 24, 1982, p. A1.

[6] The Wall Street Journal, Dec. 30, 1982, p. 9.

[7] "Kamikaze Pacifists," The Economist, p. 12 (Dec. 18, 1982).

The foregoing facts indicate that in a major national security emergency, Japanese machine tool factories and transportation and port facilities would be seriously underdefended against a Soviet attack or blockade. For this reason alone, the United States cannot permit the displacement to Japan of United States facilities for the production of machine tools that would be needed in a serious national security emergency.

Even if the Soviet Union did not apply its superior military power directly against Japan, it could be expected to use that power to intimidate.[2] "The danger lies . . . in Soviet efforts to frighten Japan into neutrality."[3] Japan is peculiarly vulnerable to such intimidation because it is fundamentally pacifistic. Japan's refusal to maintain an adequate military force to defend its industrial wealth is grounded in an article of the Japanese Constitution that provides that "the Japanese people forever renounce war as a sovereign right of the nation and the threat or use of force as means of settling international disputes.

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[1] The Washington Post, Dec. 30, 1982, p. A15, quoting senior Japanese defense analyst, Tomohisa Sakanaka and other senior government officials.

[2] "[E]ven when our adversaries do not actually fire weapons, they can exploit a preponderance of military power. They can coerce by threatening -- implicitly or explicitly -- to apply military forces . . . ." Annual Report of the Secretary of Defense to Congress, Fiscal Year 1983, p. I-10.

[3] The Wall Street Journal, Nov. 22, 1982, p. 17.

. . . The right of belligerency of the state will not be recognized."[1] In upholding Japan's contributions to the support of U.S. military facilities in Japan, the Supreme Court of Japan has indicated that, in view of "the pacifism which is the special characteristic of our Constitution," the use of military force by Japan is limited to "measures necessary for self-defense so that we can maintain our peace and security and preserve our existence."[2]

Consistent with its pacifistic constitution, the Japanese Government has declared "that Japan is constitutionally banned from exercising the right of collective self-defense on the ground that the constitution allows an act of self-defense as far as it is intended to defend Japan's own land and people, but does not permit Japan to cope with aggression against the land and people of a foreign national with which Japan has close relations."[3] Similarly, Japan's ambassador to the United States recently stated that if Japan ever acquires the military capability to close the straits that give the Soviet Pacific Fleet access to the Pacific Ocean, it would exercise that capability "only when Japan's security is threatened by direct and immediate threat from outside," because "[i]n terms of our constitution, we cannot be engaged in any kind of . . . collective security operation or effort . . . [and are] confined to the self-defense of Japan; not more than that."[1] Thus Japan has served notice that it is not a military partner of the United States in the real sense and that, if the Soviet Union attacks the United States' allies in Europe or the United States itself but not Japan, Japan will not assist the United States in "cop[ing] with [that] aggression."

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[1] Constitution of Japan, Art. 9.

[2] The Sunakawa Decision, Hanreishu, XIII (Dec. 16, 1959), reprinted in J. Maki, Court and Constitution in Japan: Selected Supreme Court Decisions 1948-60, at 302-03 (1964).

[3] Defense of Japan, 1980, White Paper of the Defense Agency of the Japanese Government, p. 87.

In a war between the Soviet Union and NATO, the Soviets could be expected to intimidate Japan with the threat of hostile military action, while at the same time offering to forbear from attacking Japan on the condition that Japan not use its industrial might to aid the West. Common sense and the Japanese constitution probably would incline Japan strongly to accept such an offer in order to protect Japan from attack. The decisive factor in this respect would probably be Japan's recognition of the Soviets' capacity to inflict punishing attacks on Japan, coupled with a perceived inability of the United States' Seventh Fleet to prevent such attacks.

This argument may be wrong, and Japan might surprise us by her staunch behavior under pressure, but the balance of prudence argues overwhelmingly in support of the point made here. The burden of proof rests upon those who would contend that Japan, in a political context in which she had a choice, would take actions that would provoke Soviet hostile activity against her.

The possibility that Japan might reach an accommodation with the Soviets in time of war is further supported by the apparently deep pacifism of the Japanese people. The Gallup Poll recently found that only 22 percent of the Japanese are willing to fight for their country, as compared with 71 percent of Americans.[1] Moreover, "[a] recent poll conducted by the Japanese newspaper Asahi Shimbun showed 70 percent of the country taking a negative stance against the very modest Japanese military buildup now being proposed by the ruling Liberal Democratic Party."[2] If the Japanese people are, in the heavy majority, unwilling to fight for their country, it is difficult to assume that they would make any substantial sacrifice, in the name of friendship, to provide militarily essential supplies to the United States in wartime.

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[1] The Washington Times, Mar. 2, 1983, p. C4 (Interview with Hon. Yoshio Okawara).

Japanese Prime Minister Yasuhiro Nakasone recently suggested the possiblility of a larger role for Japan in the defense of the Pacific region.[3] These remarks provoked an immediate "heated controversy" in Japan which "has confronted him with the first major test of his eight-week-old administration."[4] Even more disturbing was the reaction of the Soviet Union, which warned the Japanese that such measures "make Japan a likely target for a retaliatory strike . . . [which] for such a densely populated, insular country as Japan . . . could spell a national disaster more serious than the one that befell it 37 years ago."[5] This obvious reference to Hiroshima and Nagasaki, and the reaction it provoked in Japan,[1] clearly demonstrate that the Soviet Union would not hesitate to intimidate Japan in time of crisis should the Soviets find it advantageous to do so.

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[1] The New York Times, May 19, 1982, p. A-23.

[2] The Washington Post, Feb. 28, 1982, pp. B1-B2.

[3] The Washington Post, Jan. 19, 1983, p. A1.

[4] The Washington Post, Jan. 23, 1983, p. A1.

[5] The Washington Post, Jan. 20, 1983, p. A1.

Once Japan were forced into an accommodation with the Soviets, Japan could reasonably be expected to refuse to supply the United States with machine tools and other items necessary for its war effort. Japan could justify such a position on the ground that to provide such supplies would be an "act of belligerency" or involvement by Japan with respect to aggression not involving Japan, both of which it would claim are forbidden by its constitution. Or, Japan could take the position during wartime that, given the essentiality of machine tools for military purposes, they are subject to Japan's longstanding ban on export of military items. This absolute ban was recently reaffirmed by Japan's Minister of International Trade and Industry, notwithstanding Prime Minister Nakasone's earlier suggestion that it might be relaxed in favor of the United States.[2]

Japan's heavy dependence on petroleum from the Persian Gulf further diminishes its reliability as a supplier of machine tools to the United States in a time of emergency. Eighty percent of the petroleum used in Japan comes from the Persian Gulf;[3] most of the rest comes from Indonesia. Whatever the source, Japan's supply lines for energy extend across thousands of miles of sea lanes, none of which Japan is prepared to defend. Japan's factories are therefore subject to shutdown as a result of turmoil in the the Persian Gulf area or as a disruption of shipping lanes incident to war involving the United States and the Soviet Union.

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[1] The Washington Post, Jan. 23, 1983, p. A10.

[2] The Washington Times, Mar. 7, 1983, p. 6A.

[3] The Washington Post, Feb. 28, 1982, p. B2.

The conclusion to be drawn from the foregoing facts is not that Japan should be penalized for following a largely pacifistic course, which is its sovereign right. Instead, the proper conclusion is that due regard for the national security of the United States makes it impossible for the United States to tolerate the displacement of militarily essential American machine tool factories to Japan, which cannot assure any reliability of supply during a serious national emergency. Recognition of this reality does not denigrate the strong friendship between the United States and Japan, which flows in large part from the $63 billion in annual peacetime trade between the two countries, and from the important stability that United States-Japan relationship imparts to East Asia.

2. Federal Republic of Germany and Other European Nations. Notwithstanding America's strong and real alliances with the Federal Republic of Germany and certain other Western European members of NATO, the proximity of these countries to the Soviet Army and Air Force makes it impossible to count on them as suppliers of machine tools during a major national security emergency. In the face of a determined attack by Warsaw Pact forces, it would be difficult to defend major parts of Germany and the Benelux nations against rapid occupation, and impossible to maintain factory operations in, and export trade with, those countries.

There is considerable disagreement among defense professionals over the present and future ability of NATO to contain and defeat a Warsaw Pact invasion.[1] Regardless of which school of thought is correct -- and short of the test of battle there is no way of knowing who is correct -- there is consensus on the following relevant points:

- Massive damage will be inflicted upon the transportation infrastructure within and out of Western Europe.
- Economic activity in industrial NATO-Europe will be substantially disrupted or virtually halted "for the duration."
- NATO-European countries will not be inclined to produce and transport machine tools (or other items) to enable the United States to mobilize to wage a protracted war.
- The sea and air lines of communication across the Atlantic will be strongly contested and probably disrupted.

D. Existing Programs for the Supply of Machine Tools During a National Emergency Are Inadequate for that Purpose.

The government presently relies on the Machine Tool Reserve, including Plant Equipment Packages, and the Machine Tool

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[1] See, for example, John J. Mearsheimer, "Why Soviets Can't Win Quickly in Central Europe", 7 International Security, No. 1 (Summer 1982), pp. 3-39; and Anthony H. Cordesman, "M-X and the Balance of Power: Reasserting America's Strength," Armed Forces Journal International, December 1982, pp. 21-51.

Trigger Order Program, to provide machine tools in the event of a national emergency. These programs clearly would not fill a breach caused by the closure of American machine tool manufacturing plants and their replacement by Asian and European plants. The Machine Tool Reserve is comprised of seriously obsolete equipment, much of which, moreover, is inoperable. The Trigger Order Program can work only if there are healthy American machine tool builders available to respond to the trigger orders when they come; in the meantime, the program provides no inducement or assurance that the American machine tool industry will maintain its strength or existing production capacity. Neither can mobilization planners and officials of the Department of Defense assume that a substantial portion of the machine tools in place in factories producing civilian goods could readily be used to produce armaments and other military items in the event of a national security emergency.

The machine tools in factories today are, for the most part, either too obsolescent or too highly dedicated to other uses to permit their use for the manufacture of modern armaments.

In the event of a national emergency, the machine tool stockpile would be at most marginally useful because its components are generally obsolete or inoperable. Many of the machine tools presently in use for the production of civilian goods could not readily be diverted to military production. The Trigger Order Program assumes, but does not provide for, adequate domestic machine tool production capacity to meet national security needs, and the number of machine tools that are proposed to be included in contingent "trigger order" contracts is but a fraction of those that would be required in a serious national security emergency. Therefore, any harm to the national security caused by the debilitation of the domestic machine tool industry will not be offset by the Trigger Order Program, the Machine Tool Stockpile, or the redeployment of machine tools presently used to make goods for civilian consumption.

VI. THE IMPOSITION OF QUOTAS WILL REDUCE THE THREAT TO NATIONAL SECURITY

The import relief requested by NMTBA will help to restore the vigor and preserve the technological primacy of the United States' machine tool industry, so that it will be able to respond strongly and rapidly to any national security emergency. Moreover, the remedy will provide for some immediate increase in the industry's production capacity. The requested remedy therefore serves the fundamental national security objectives of strengthening the United States' deterrence posture and preserving its ability to respond promptly and effectively to an attack upon its interests and to sustain a defense, if necessary, during a protracted conventional war.

The requested relief should be granted immediately if it is to have its intended, fully potent effect on the machine tool industry. A deferral of relief will simply make the problem worse and the remedy more costly. The industry still retains substantial residual strength that will permit it to repond if current trends are reversed in time. Among other things, the United States is still generally recognized as the leader in machine tool technology. Foreign builders have so far succeeded principally by copying American product innovations more cheaply, not by developing their own new products. The United States still offers a wider range of machine tool products than the industry in any other country. It would be most unfortunate to lose this advantage. Moreover, the industry's plant and equipment and skilled labor force, while weakened or reduced, are still sizeable. In these circumstances, it will be far easier to reverse the present adverse trends before they have further weakened the industry, rather than to try to rebuild this industry after it has declined.

While NMTBA and its members are convinced that the relief they have requested is absolutely essential to the revitalization of the American machine tool industry, they recognize that the relief, by itself, will not accomplish that goal. A vigorous program of self-help by the industry is required, and it is already underway. The full implementation of the program, however, will require investment from cash flow, equity and debt financing sources. Much of that investment cannot be arranged until the serious uncertainty about the future vitality of the machine tool industry is diminished by a grant of the requested relief.

The industry has not ignored its problems and the formidable challenges it faces. In response to the precipitous rise in imports from Japan, which began in 1975, a group of leaders of the American industry examined in great detail the methods of the Japanese industry. This group, called the NMTBA Japanese Study Mission, published in September 1981 a report that forthrightly recommended that the American industry adopt certain principles of management to assure its continued existence and vitality.[1] An early summary of the report was provided this Committee in July, 1981 testimony. Specifically, the report recommended that the American industry should: (1) invest aggressively in the latest, most efficient means of production that incorporate the newest manufacturing technology, to improve productivity and reduce costs, thereby foregoing short-term returns in favor of long-term objectives; (2) make heavy investments in research and development to devise new products; (3) increase dramatically its emphasis on every aspect of quality in design, manufacture, application and service; (4) develop extensive programs to motivate, build trust and instill pride in their workforce, including sincerity in communication and participation by the workforce in work place activities; and (5) take an aggressive world-marketing approach to maximize exports to foreign markets.[2]

In short, the United States machine tool industry is keenly aware that the relief requested in its Petition will, in the words of NMTBA's President, simply afford the industry a necessary "breathing spell."[3]

At the same time, however, it must be emphasized that there are no reasonable bases for expecting that self-help, by itself, can restore the domestic machine tool industry to health. The present relative strengths of our foreign competitors, including their ability to supply cheap tools on short notice from bulging domestic inventories and to continue to expand their capacities and productivity notwithstanding the current depression in the United States market, present an ongoing threat that must be met. There is a serious prospect that, in the absence of relief, the American industry will suffer debilitating, long-term reverses that will destroy its substantial latent strength and frustrate its potential for reinvigoration.

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[1] Report of the Japanese Study Mission of the National Machine Tool Builders' Association: "Meeting the Japanese Challenge," Sept. 14, 1981.

[2] Id., pp. 6-7.

[3] "America Needs You," Address of James A. Gray, President, National Machine Tool Builders' Association, at NMTBA's Annual Meeting, Nov. 11, 1982, p. 3.

It can be expected that some foreign economic interests or governments opposing our Petition may attempt to couch their arguments in terms of the United States' national security interests, by suggesting that the relief we seek might upset friendly international relations.

However, it cannot be disputed that in a military sense, the survival of the Free World including the nations affected by the requested relief depends on the strength of the United States. In peacetime, the prosperity of our friends and allies has depended on freedom of the seas and the general stability of the world order that American military strength has provided. In time of war, Japan and parts of Western Europe, including Germany, would, because of their geographical positions, be vulnerable to surprise attacks by the Soviet Union and its allies that could temporarily sweep them under Soviet control, or deny their access to the West. Given that fact, and given that liberation of Soviet-occupied territory might be impracticable in the nuclear context, allies of the United States who are strategically exposed by reasons of geography should look with favor on United States policies that will strengthen deterrence. The productive capability of the United States defense industry is an American "long suit" for deterrence in Soviet eyes. Soviet respect for American defense-industrial mobilization potential is genuine, to date has been well-founded, and should be exploited in the future to diminish the credibility of briefings in Moscow that promise victory in short war.

Therefore, the United States has not only a statutory duty to its people to preserve its military strength, but also a similar fiduciary duty to its allies, such as Germany and the other NATO countries, and its friends, such as Japan, to deter aggression and to be prepared, if necessary, to intervene on their behalf. In short, the relief that NMTBA requests will serve the broad and fundamental interests of our friends and allies.

Moreover, a grant of relief under the National Security Clause in the compelling circumstances of the machine tool industry cannot offend Japan, which has only recently justified the protection of some of its agricultural products on the ground that "national security would be endangered if the country were totally dependent upon imported food."[1] Indeed, the United States has acknowledged the legitimacy of Japan's position. According to David MacDonald, former Deputy United States Trade Representative, the Japanese have a "legitimate concern for the issue: will we have food if there is a world crisis and the trade stops," and the "national security argument" that the Japanese have made on the basis of this concern is "certainly . . . valid."[1]

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[1] 423 U.S. Export Weekly 813 (Sept. 7, 1982).

It is equally certain that the United States should have a legitimate concern whether it will be able to manufacture an adequate number of armaments and other equipment to support its troops if there is a world crisis and trade stops. To protect against this possiblity, the United States may erect barriers to the import of machine tools that threaten to debilitate the domestic machine tool industry. While food may be the paramount concern of the densely populated island nation of Japan, maintenance of the ability to produce the weapons necessary to deter aggression by the Soviet Union is a paramount concern of the United States. Indeed, in that regard, the United States bears an obligation that is unique among the nations of the world. The long-standing claim, that is virtually a cliche' by reason of its longevity and familiarity, that the United States is the "Arsenal of Democracy," is more apt looking to the mid- and late-1980s and the 1990s than it ever was in World Wars I and II.

Furthermore, although the machine tool industry is essential to the successful military mobilization of the United States, it is a small industry that accounts for but a minute fraction of the volume of trade with nations such as Japan and Germany.[2]

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[1] Id.

[2] Machine tool imports in 1982 from Japan and Germany accounted for less than 2 percent of all merchandise imports from those nations. U.S. Department of Commerce, 62 Survey of Current Business, No. 12, p. 44, and Import Report IM146 (1983).

Therefore, the requested relief does not threaten to disrupt existing trade relationships.

There are, in addition, principles of fairness that favor the relief that NMTBA requests. Japan's contribution to the military defense of Western interests is, and has long been, much less than the United States contribution,[1] even though Japan depends totally on, and has prospered awesomely from, the interests that the American military protects.[2] "[Japan] has as much at stake in the security of free democracies as Europe has in the continuing strength of the United States. Yet Japan contributes almost nothing towards that security, while its allies strain to find the money to keep abreast of military spending in the Soviet Union."[3] It is therefore not unreasonable to expect Japan to bear the very modest burden of a grant of relief pursuant to the Petition, which would strengthen the national security of the United States. Similarly, while the contributions of Western European nations to defense have far exceeded

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[1] "The Japanese have spent less than 1 percent of their gross national product on defense since the late 1960s, while the United States has spent between 6 and 10 percent of its GNP on defense during this period. The average American taxpayer spends $759 a year on defense; the average Japanese, $98." The Washington Post, Feb. 28, 1982, p. B2.

[2] "Japan has prospered under the security provided by the U.S. defense umbrella and had developed into an economic superpower capable of assuming a greater share of common defense costs." Prepared Statement, General Accounting Office, International Division, Hearings on Department of Defense Appropriations Before the Subcomm. on Defense of the Senate Appropriations Comm., Apr. 21, 1982.

[3] "Kamikaze Pacifists," The Economist, Dec. 18, 1982, p. 11.

Japanese contributions, they have lagged far behind those of the United States. This is shown in Figure 18.

Additionally, Japan and many nations of Western Europe have been lax in enforcing international standards prohibiting the sale of militarily significant high technology equipment, including machine tools, to the Soviet Union and its allies;[1] by contrast, the enforcement of the standards by the United States has been strict. The consequence has been to weaken the defense posture of the West.[2] The Secretary of Defense recently pointed out the dollar burdens that fall primarily on the United States as a consequence:

> "[E]ven an increase in U.S. investments [in military items] as high as 14 percent per year would not close the gap [between the West and the Soviet bloc in accumulated military] assets until the early 1990s. The gap could be closed more quickly if U.S. investments provided qualitative innovations that increase the rate of obsolescence of past Soviet investments. This point highlights the importance of research and development and of policies to protect our technological lead.
>
> Technology transfer from the West to the Soviet bloc, in effect, increases our defense burden."[3]

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[1] For example, in 1981 the delegation from the United States machine tool industry that observed the facilities and practices of the Japanese industry reported that:

> "(M)achine tools sold to Socialist nations require the same types of licenses as in the U.S. However, obtaining them is a much different matter. Licenses for shipments to the USSR take about one month for a 5-axis machine tool. . . . The companies questioned stated that they have never had a license denied." Meeting the Japanese Challenge, Japanese Study Mission of National Machine Tool Builders' Association, Sept. 14, 1981 at 28.

[2] Annual Report of the Secretary of Defense to Congress, Fiscal Year 1983, p. I-22.

[3] Id. at II-7.

Similarly, the Central Intelligence Agency has reported that

> "it is clear that the Western military expenditures needed to overcome or defend against the military capabilities derived by the acquisition of Western technology far outweigh the West's earnings from the legal sales to the Soviets of its equipment and technology."[1]

Moreover, as a consequence of disparate enforcement of the export restrictions, the United States machine tool industry has suffered competitively. The requested relief tends to redress this unfairness.

Finally, neither Japan nor the nations of the European Common Market can reasonably complain that the requested relief is somehow irregular because it destroys the freedom of international machine tool markets. Outside the United States, free markets in machine tools have never been the norm. The present strength of the Japanese machine tool industry is the result of massive government subsidies and government-led industrial coordination and organization. Similar subsidies favor producers in the Common Market countries.

VII. CONCLUSION

The threat to national security can be measured by the delay in mobilization that would be caused by the inadequate production capacity of the domestic machine tool industry. The amount of delay that is tolerable from the national security standpoint is of course a matter for defense planners and ultimately the President to determine. It is a matter of record, however, that severe delays and bottlenecks attributable to the machine tool industry were experienced in prior wars, and it is obvious that any delays, even short ones, are potentially detrimental to the national security and weaken the United States' deterrence posture.

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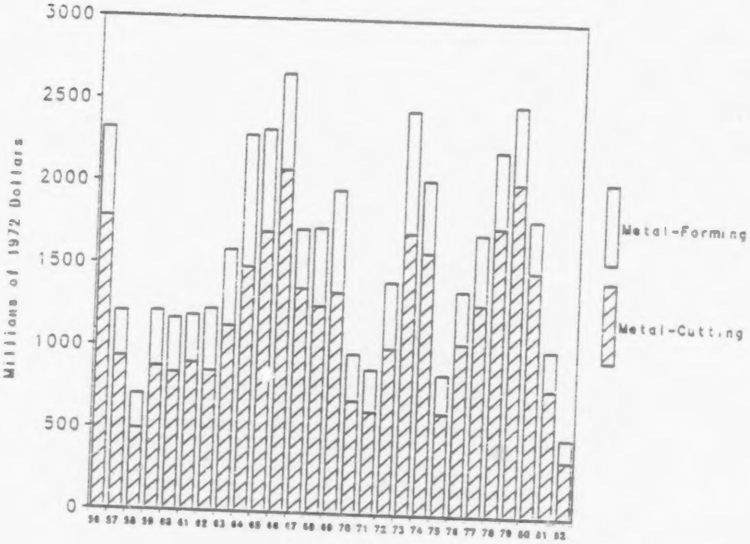
[1] CIA Report on Soviet Acquisition of Western Technology, Apr. 1982, quoted in Transfer of United States High Technology to the Soviet Union and Soviet Bloc Nations, Report of the Perm. Subcomm. on Investigations of the Senate Comm. on Governmental Affairs, S. Rep. No. 97-664, 97th Cong., 2d Sess. 5 (1982).

NMTBA believes that the mobilization problems in a future war are likely to be more severe than in the past both because there may be less time for mobilization and because it may be more difficult than in the past to convert existing machine tools to defense-related production. The problem today, moreover, goes beyond mere delays and restricted production capacity. Sophisticated production processes, and sophisticated weapons systems, require nothing less than a domestic machine tool industry that is at least equal to the world's best. If imports continue to rise, the United States industry -- long the world leader -- is in danger of losing its technological edge along with its production capacity.

For the reasons stated, NMTBA submits that imports of machine tools are impairing, and threaten to continue to impair, the national security and that, under Section 232, action must be taken to adjust the level of imports so that they do not impair or threaten to impair the national security.

FIGURE 1

Net New Orders for Machine Tools
Received by U. S. Builders
(1972 Dollars)
1956-82

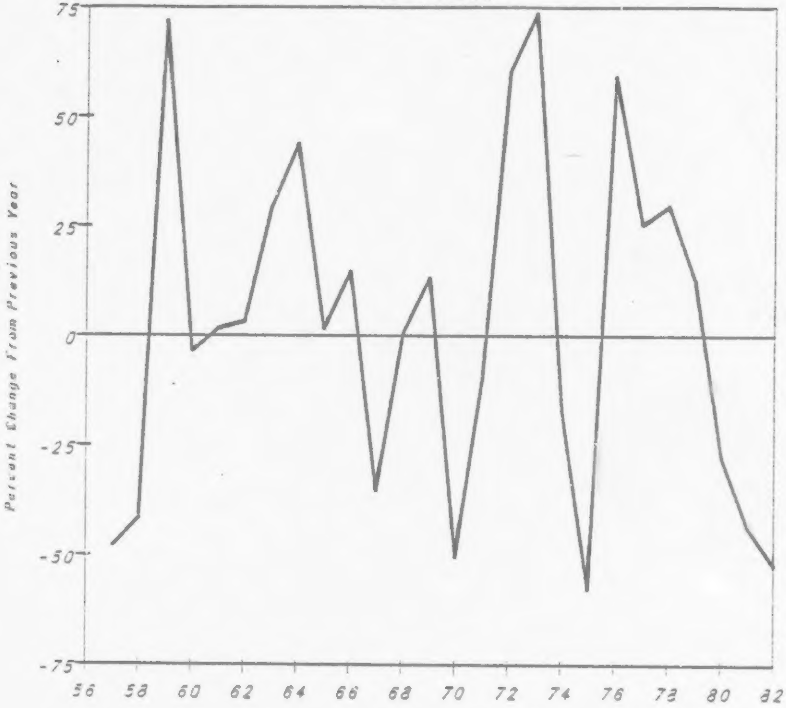


Source: NMTBA 'Economic Handbook of the Machine Tool Industry, 1982-83' and NMTBA 'Industry Estimate of Machine Tool New Orders, Cancellations, Shipments and Backlog' (monthly).

Adjusted using Bureau of Labor Statistics (BLS), U. S. Department of Labor, Producer Price Index for respective sector, re-based to 1972=1.00.

FIGURE 2

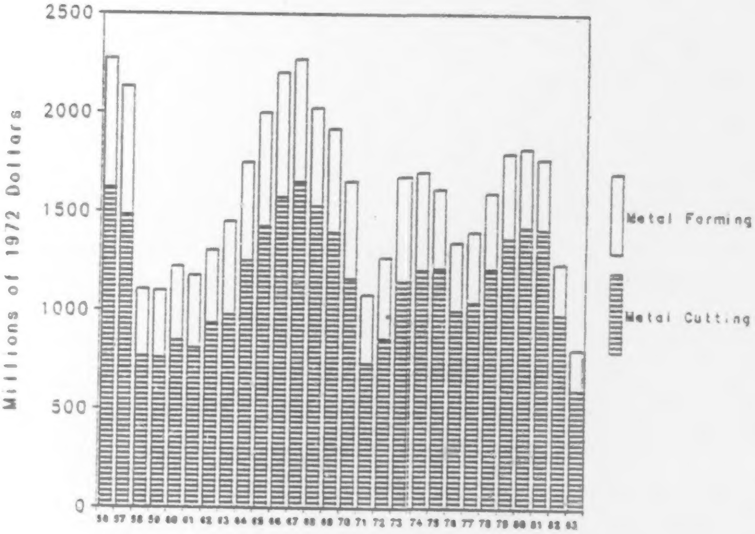
Year-to-Year Change in
Real Net New Orders of Machine Tools
1957-1982



Source: NMTBA 'Economic Handbook of the Machine Tool Industry, 1982-83' and NMTBA 'Industry Estimate of New Orders, Cancellations, Shipments and Backlog' (monthly).

FIGURE 3

Shipments of Machine Tools
by U. S. Builders
(1972 Dollars)
1956-83 (a, b)

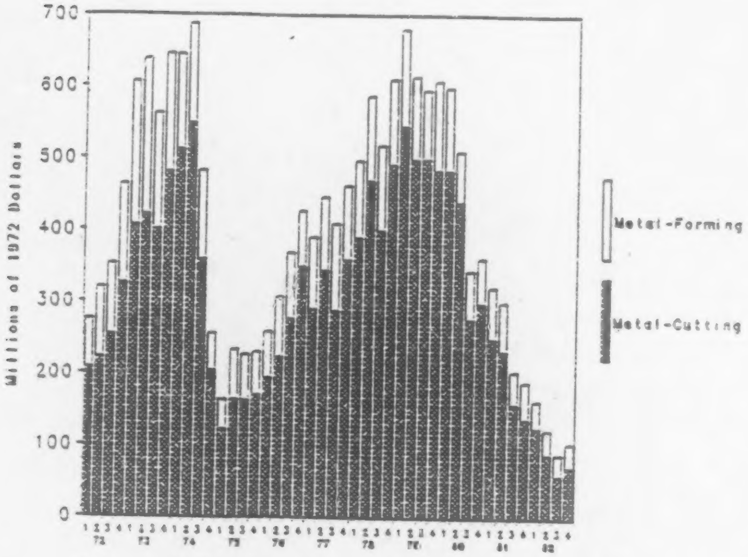


Source: U. S. Department of Commerce, 'Current Industrial Reports, Series MQ-35W, Metalworking Machinery.' Adjusted using BLS Producer Price Index for respective sector, re-based to 1972=1.00

(a) 1982 estimated using 3rd quarter figures for 4th quarter.
(b) 1983 forecast based on '1983 U. S. Industrial Outlook', U. S. Department of Commerce (1983)

FIGURE 4

Net New Orders for Machine Tools
Received by U. S. Builders
(1972 Dollars)
Quarterly, 1972-82

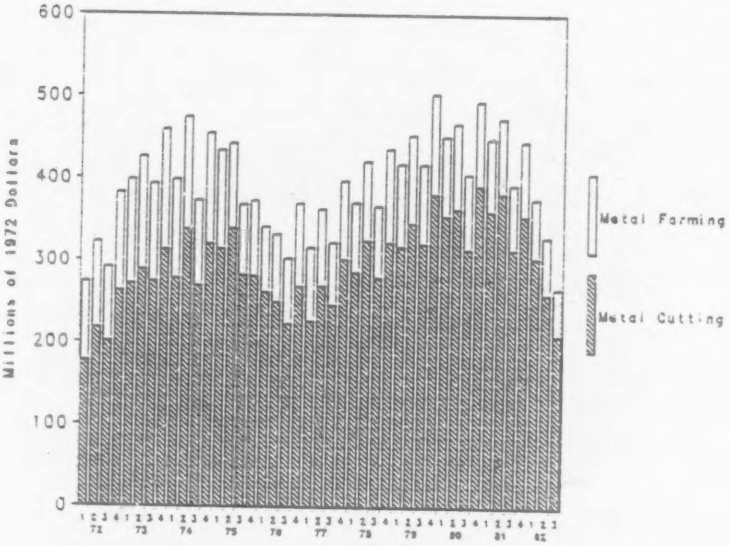


Source: NMTBA 'Economic Handbook of the Machine Tool Industry, 1982-83' and NMTBA 'Industry Estimate of Machine Tool New Orders, Cancellations, Shipments and Backlog' (monthly).

Adjusted using BLS Producer Price Index for respective sector, re-based to 1972=1.00.

FIGURE 5

Shipments of Machine Tools
by U. S. Builders
(1972 Dollars)
Quarterly, 1972-82

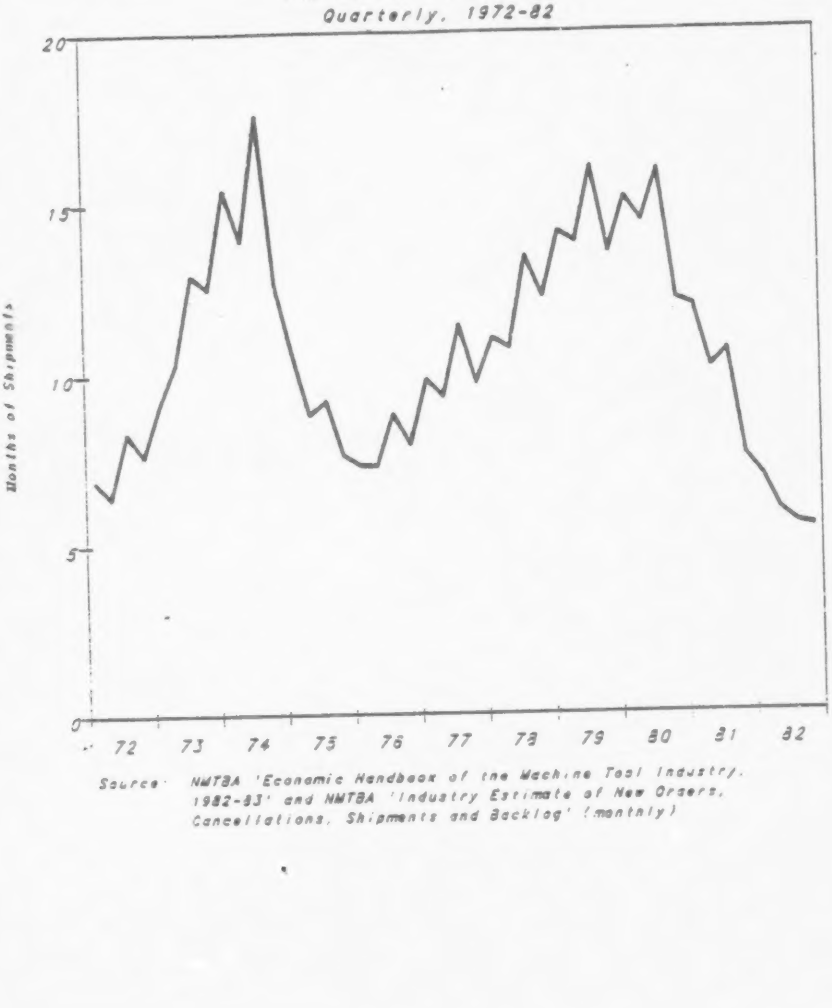


Source: U. S. Department of Commerce, 'Current Industrial Reports, Series MQ-35W, Metalworking Machinery' (quarterly and annual summaries).

Adjusted using BLS Producer Price Index for respective sector, re-based to 1972=1.00.

FIGURE 6

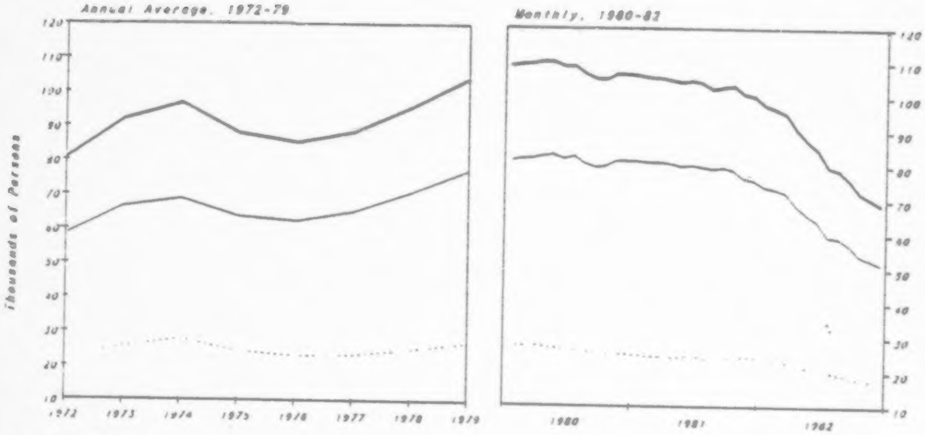
Backlog of Unfilled Orders
for U. S. Machine Tools
(in months of shipments)
Quarterly, 1972-82



Source: NMTBA 'Economic Handbook of the Machine Tool Industry, 1982-83' and NMTBA 'Industry Estimate of New Orders, Cancellations, Shipments and Backlog' (monthly)

FIGURE 7

Total Employment in the
Machine Tool Industry
(Thousands of Persons)
1972-82

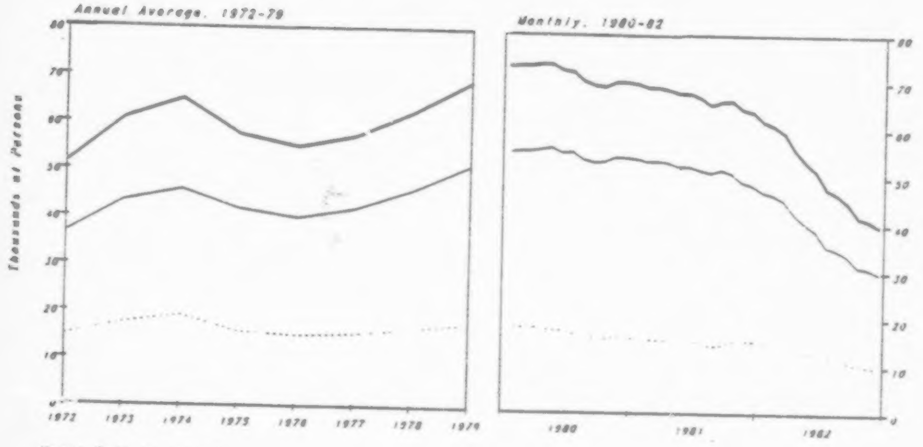


Metal-Cutting = Line
Metal-Forming = Dot
Industry Total = Bold Line

Source: U. S. Department of Labor, Bureau of Labor Statistics, 'Employment and Earnings' (monthly)

FIGURE 8

Employment of Production Workers
in the Machine Tool Industry
(Thousands of Persons)
1972-82

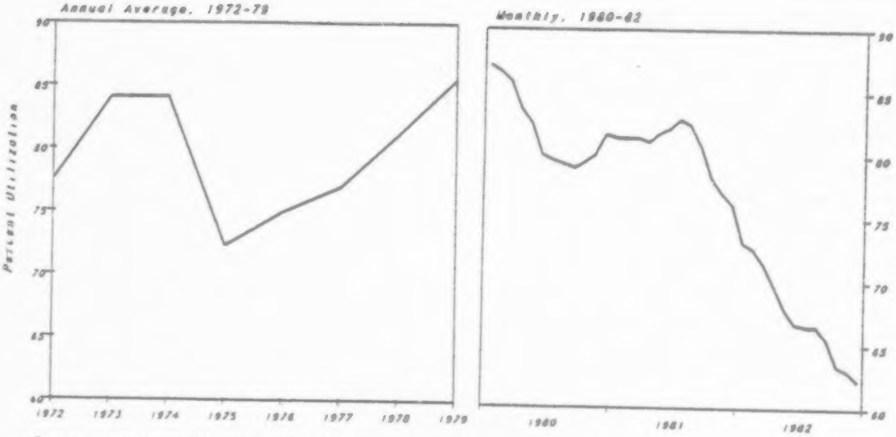


Metal-Cutting = Line
Metal-Forming = Dot
Industry Total = Bold Line

Source: U. S. Department of Labor, Bureau of Labor Statistics, 'Employment and Earnings' (monthly)

FIGURE 9

Capacity Utilization
in the Nonelectrical Machinery Industry
1972-82

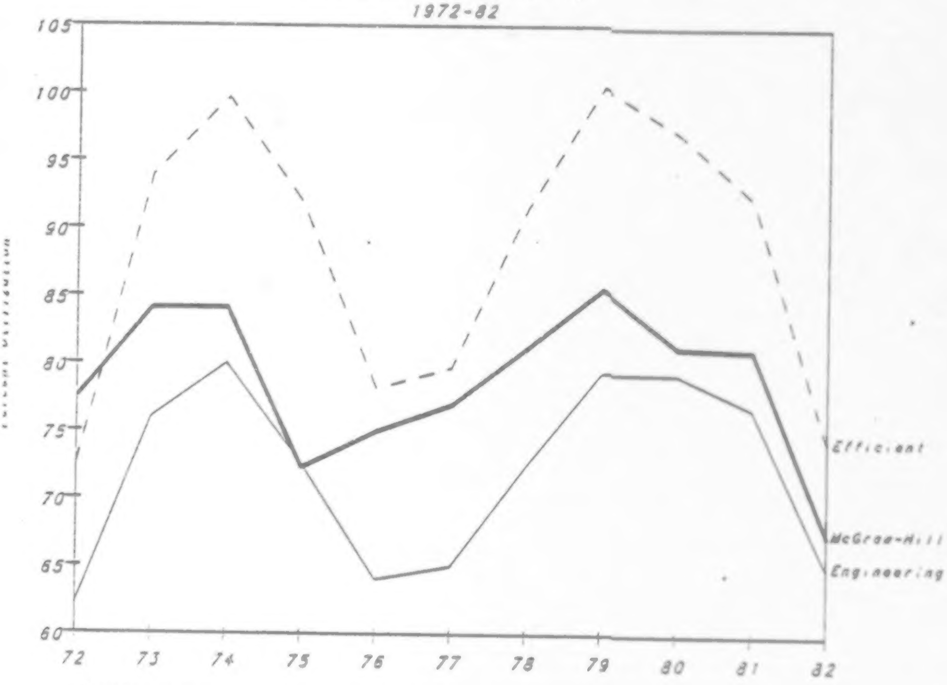


Source: McGraw-Hill Publications Company, Department of Economics, 'McGraw-Hill Operating Rates Report' (monthly)

FIGURE 10

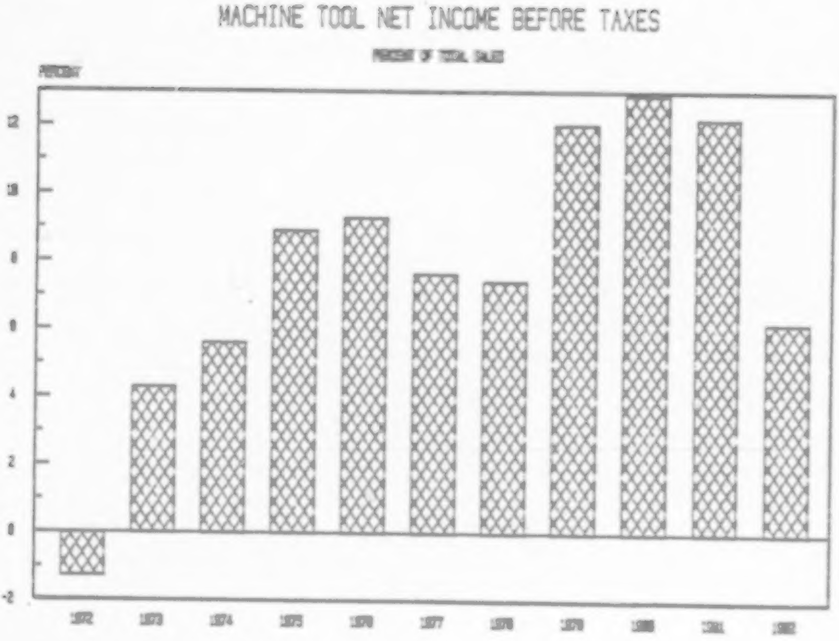
Capacity Utilization:

McGraw-Hill Rates for the
Non-electrical Machinery Industry and
DRI 'Efficient' and 'Engineering' Rates for the
Machine Tool Industry
1972-82



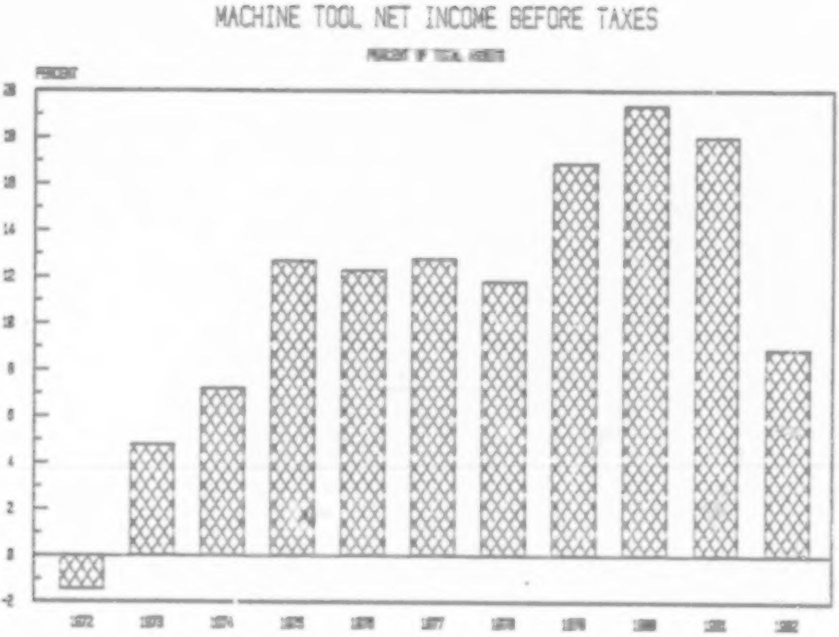
Source: Data Resources, Inc. (1983) and McGraw-Hill
Publications Company, Department of Economics,
'McGraw-Hill Operating Rates Report' (monthly)

FIGURE 11



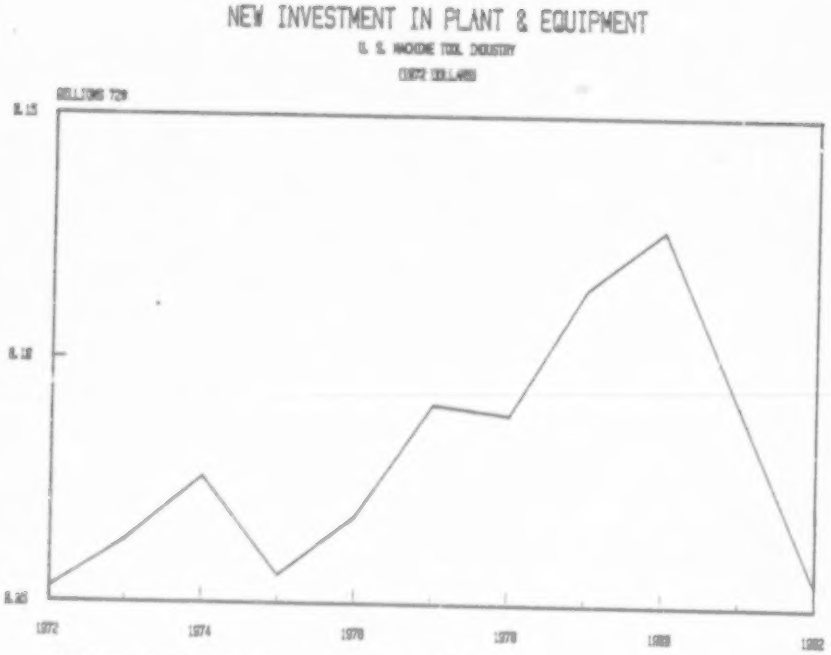
SOURCE: NMTBA "Economic Handbook of the Machine Tool Industry 1982-83," p. 255; 1982 projection by Data Resources, Inc. (1983).

FIGURE 12



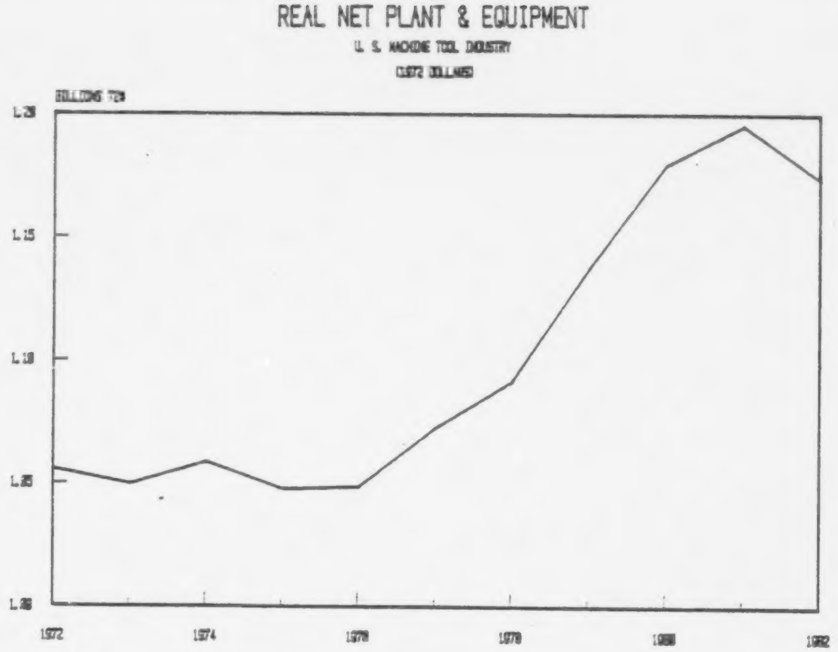
SOURCE: NMTBA "Economic Handbook of the Machine Tool Industry 1982-83," p. 255; 1982 projection by Data Resources, Inc. (1983).

FIGURE 13



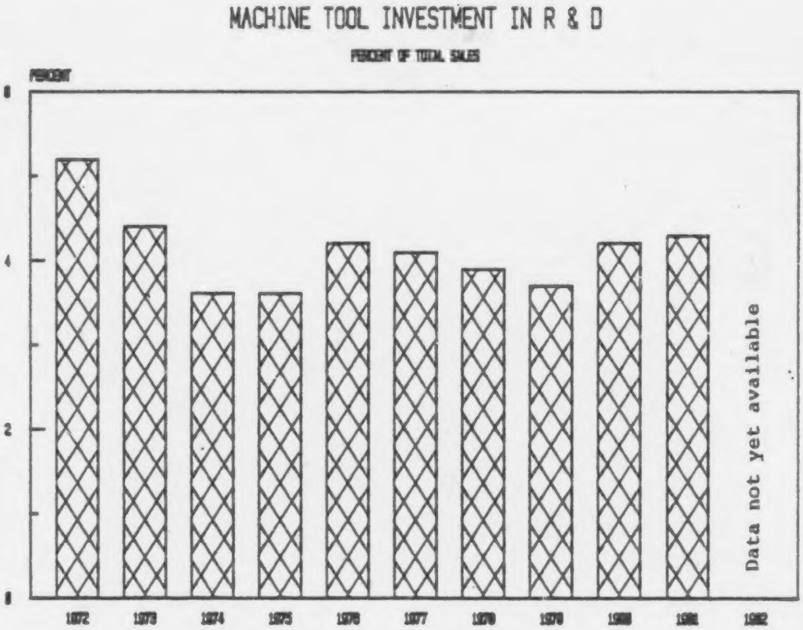
SOURCE: Data Resources, Inc. (1983).

FIGURE 14



SOURCE: Data Resources, Inc. (1983).

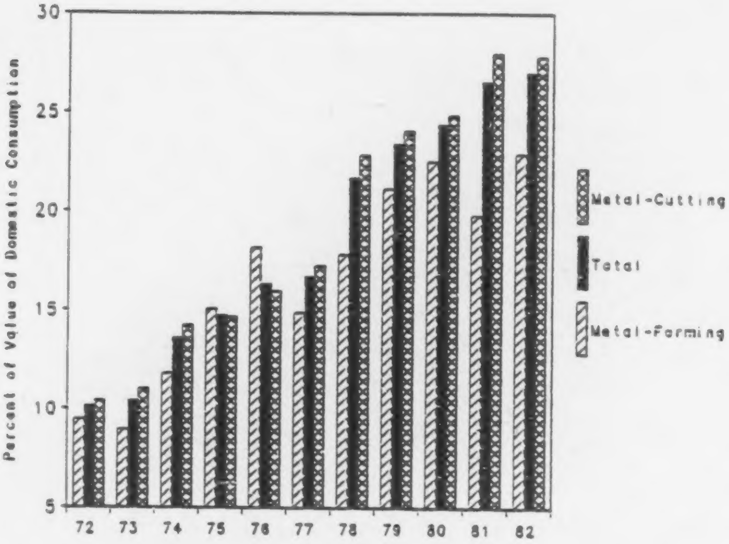
FIGURE 15



SOURCE: National Machine Tool Builders' Association, "Confidential Financial & Operating Ratio Report."

FIGURE 16

Import Share of
Value of U. S. Domestic Consumption of
Machine Tools
1972-82

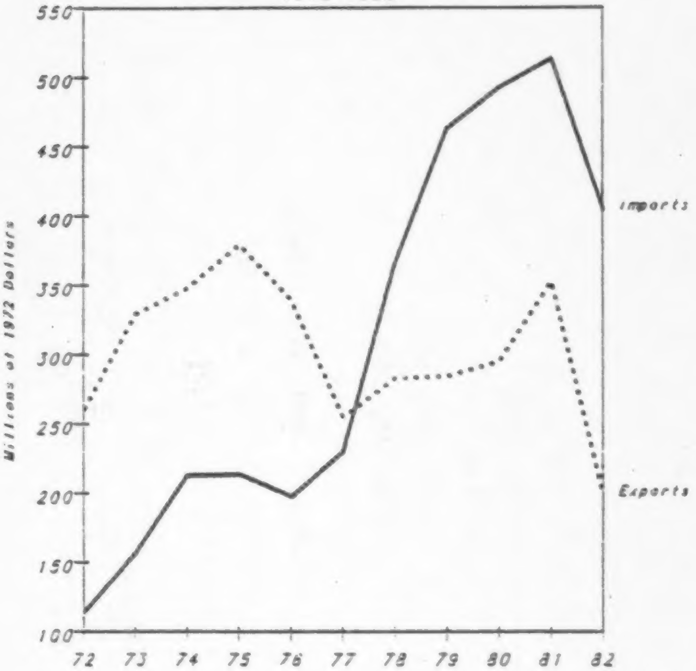


Source: U. S. Department of Commerce, Series IM-146 and EM-522 (monthly), and 'Current Industrial Reports', Series MQ-35W, Metalworking Machinery (quarterly and annual summaries).

1982 data are for first three quarters.

FIGURE 17

U. S. Imports and Exports of
Machine Tools
(1972 Dollars)
1972-1982

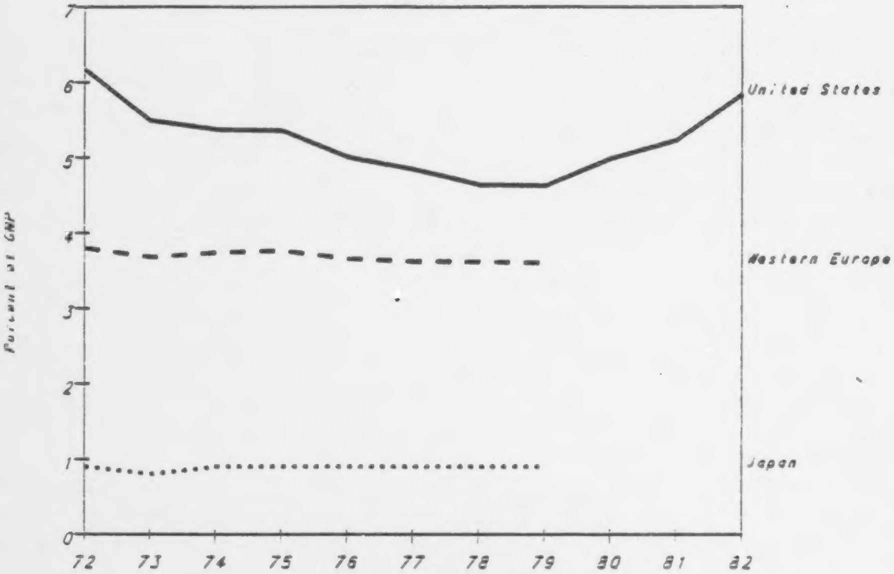


Source: U. S. Department of Commerce, Series IM-146 and EM-522 (monthly)

Adjusted using BLS Producer Price Index for respective sector, re-based to 1972=1.00

FIGURE 18

Defense Spending as a
Percent of Gross National Product,
Western Europe, Japan and the United States
1972-82



Source: U.S. Arms Control and Disarmament Agency, 'World Military Expenditures and Arms Transfers' (1983), and U.S. Department of Commerce, Bureau of Economic Analysis, 'National Income and Product Accounts of the United States'.

'Western Europe' includes the United Kingdom, France, Italy and West Germany.

(Post-1979 data for Western Europe and Japan not yet reported).

Senator JEPSEN. At this time we will proceed with the statements of the other members of the panel, and then we will get into questions.

Mr. Arnold, you may proceed.

STATEMENT OF FRED T. ARNOLD, SENIOR MANAGING CONSULTANT, DATA RESOURCES, INC., WASHINGTON, D.C., REPRESENTING THE NATIONAL MACHINE TOOL BUILDERS' ASSOCIATION, ACCOMPANIED BY GEORGE F. BROWN, GROUP VICE PRESIDENT, DATA RESOURCES, INC.

Mr. ARNOLD. Good morning. My name is Fred Arnold. I am the senior managing consultant at Data Resources, Inc., who directed recent research concerning the relationship between the domestic machine tool industry and potential defense demands. Today, I am submitting a joint prepared statement with George F. Brown, who is also in attendance. Mr. Brown is a group vice president at Data Resources and participated extensively in the direction of our work which was included with NMTBA's petition for trade adjustment.

In recent years, DRI has made significant investments in the development of data bases and analytic structures for the study of defense economics. In particular, and of most relevance to the issues at hand, we have developed a modeling environment which enables analysts to examine the industrial output requirements which are attendant to defense needs, where the latter are expressed in the 50 major DOD budgets accounts.

This integrated modeling system was developed for and in close cooperation with the Office of Program Anaylsis & Evaluation in the OSD and is routinely used by that office to examine economic issues which are associated with defense spending. These tools provided the basis for much of our work in the area of defense-related demand for machine tools.

The importance of machine tools for military production, clearly recognized in many Government statements and programs, is underscored by data showing the large portion of aggregate machine tool consumption that is linked to defense. Machine tool production for defense falls into three categories.

The first two categories are the direct and indirect purchases of machine tools by the Department of Defense. Direct purchases consist of those made by DOD for use in Government-owned facilities or for transfer to private contractors as Government-furnished equipment. The indirect purchases are made by private firms on their current account, that is, purchases which are not added to the firm's capital base. Instead, they are purchased for subsequent transfer to DOD. Purchases in this category would include machine tools which are installed in machine shops on board ships, purchases for installation at Government arsenals under O&M work and other instances where DOD is the final recipient of the machine tool.

The third category consists of the induced capital formation in the private sector which is attributable to defense production. Purchases in this category are the result of machine tool acquisition by defense prime contractors and others who require machine tools to produce ships, airplanes, tanks and other weapons and military equipment.

Figure A which is appended to our prepared statement reports the distribution of defense-related purchases in these three categories for the years 1977–82. As you can see, the defense-directed share of total domestic machine tool consumption has grown from slightly more than 10 percent in 1977 to 20 percent in 1982 where the defense-related consumption was $564 million out of a total consumption of $218 billion. These figures are reported as constant 1972 dollars.

Over this period, the annual rate of growth in DOD's consumption of machine tools was slightly greater than 20 percent, whereas the rate of growth in total consumption was approximately 5 percent. The remaining portion of the domestic consumption of machine tools is, of course, related to nondefense needs.

To demonstrate the effect of imports on the industry's propensity to invest in new production capacity, we examined the investment behavior of the domestic machine tool industry for 1982 and its projected investment behavior for 1983. We contrasted this behavior with the investment decisions which would have occurred under the hypothetical assumption that imports were entirely excluded from the domestic machine tool market for these years. Under this assumption, there is an increase in the size of the market satisfied by domestic production of machine tools. The results of this analysis are shown in figure B of the prepared statement.

The expansion of the market for domestic machine tools caused by the exclusion of imports would result in an increase in new capital investment of at least 50 percent above the level forecasted with present import levels, and an annual increase in domestic production capacity of 9 to 10 percent. Capacity in this instance is termed "engineering" and reflects the maximum output which the industry could attain.

In the broadest context, our research led us to conclude that the domestic industry's normal production capacity, that is, the economist's definition of capacity, is probably adequate to satisfy the requirements both of the peacetime defense buildup and of a limited war—on the assumption, in both cases, that imports would continue to be available. But the industry's maximum production capacity, the engineer's definition of capacity, which assumes three shifts, under full mobilization conditions, is seriously inadequate to satisfy the requirements of a large-scale conventional war.

Figure C of the prepared statement reflects a case in point where the projected potential supply of machine tools for the years 1983 through 1987 falls short of projected demand.

The conditions depicted on figure C reflect the demands which would be placed upon the machine tool industry during a relatively large-scale conventional war where the United States is a major combatant. Imports to augment domestic supply were assumed to be unavailable, and no labor or material constraints on the maximum output of our domestic industry were imposed.

Our analysis indicates that new domestic production capacity would be brought on stream, in response to aggregate demand, at the rate of 18.5 percent during 1983, 10.9 percent during 1984, 19.8 percent during 1985, and 15.4 percent during 1986, for an aggregate increase through 1983 of 81.4 percent.

It should be noted that we have assumed no activity on behalf of the Government to foster new capacity in the U.S. industrial base.

Despite these additions to capacity, however, a tight supply situation would arise as early as 1984, and by 1985 there would be a substantial and growing gap, as figure C shows. Backlogs and leadtimes would increase, disrupting military procurement. Even though military requirements would be given priority, it is certain that military production would be subject to substantial and unacceptable delays.

In order to evaluate the benefits which would accrue in terms of increased capacity should the 232 petition be acted upon favorable, we also simulated the large-scale conventional war over the period 1988–91. This was done to evaluate the industries' capital base with and without import adjustment prior to and during a sustained period of war-related demand.

Figure D of the prepared statement shows the wartime demand and supply absent any trade adjustments and indicates that the machine tool bottleneck would occur from the outset which is a year earlier than the previous case. This occurs for several reasons.

First, imports will have gained a larger share of the domestic market in the absence of any restrictions; second, they are assumed to be unavailable during a war; and third, the domestic industry will have less idle capacity than it has currently.

We have calculated the level of quotas that would be required to stimulate new investment in an amount sufficient to increase the domestic production base by 10 percent in 1987 over the base that we project for that year in the absence of relief. The tradeoff between imports and capacity is shown in figure E of the prepared statement. In order to accomplish the 10-percent increase, imports would have to be restricted to 17.5 percent of the domestic market; 10 percent was chosen as a target which is both achievable and, as we have demonstrated, provides a significant buffer to emergency capacity.

Our analysis clearly demonstrates that the imposition of quotas can and will increase the domestic production base for machine tools. If machine tool imports are limited to 17.5 percent of the domestic market in both the metal-cutting and metal-forming sectors, the resulting increase in demand for domestic machine tools will induce new investment in plant and equipment. We have estimated that the added investment would total $91 million—1972 dollars—over the 5-year period from 1983 through 1987. This is shown in figure F of the prepared statement.

This additional investment in plant and equipment would increase our domestic emergency production capacity, over and above the capacity that would exist in the absence of quotas, by approximately $434 million—1972 dollars—of annual production capacity by the end of 1987. These incremental increases in emergency capacity which would be attributable to the proposed 232 action are reflected in figure G of the prepared statement.

This additional production capacity would represent a net increase of 10 percent in the Nation's overall machine tool emergency production capacity. In the case of a large-scale conventional war for which mobilization begins in 1988, this additional capacity would enable the domestic machine tool industry to satisfy demand, during the critical mobilization year and the early stages of fighting notwithstanding the loss of imports. This is shown in the right-hand panel of figure H of the prepared statement.

In practical terms, the cost of this additional capacity is a possible tightness of supply in the latter stages of the 5-year period, before 1988, during which quotas would be in place. There is ample precedent to suggest that this condition will not become constraining since the industry has demonstrated that it can operate at higher-than-normal rates when conditions require.

Because the domestic machine tool industry is highly competitive in its pricing behavior, we have concluded that the imposition of the quotas requested by the petition would not result in significant increases in prices over the levels that would be likely to occur in the absence of quotas.

DRI has analyzed the rate of price increases that are likely to occur for the years 1983 through 1987 with and without quotas. Figure K of the prepared statement shows that the projected prices for machine tools if quotas are imposed are not likely to exceed the prices that are projected in the absence of quotas by more than approximately 2 percent in any year. In most years, the projected price differential is negligible. Factors holding down prices include competition between domestic producers, the large on-hand stock of Japanese machine tools in inventory, the idle capacity that currently exists in the industry, and continued, albeit reduced, competition from imports.

In summary, our investigations have led to a number of conclusions which we believe are germane to the pending 232 decision. These are (1) machine tools are clearly important to our current peacetime defense plans and would be absolutely critical to our ability to sustain a large-scale, conventional war; (2) our current domestic industrial base for machine tool production would be inadequate to supply critical defense and nondefense demands if the United States were forced to prosecute a large-scale conventional war today; (3) the current situation will deteriorate further by the end of this decade, due mainly to a large and growing share of the domestic market which is satisfied by imported machine tools; (4) the investment behavior of the domestic industry is responsive to changes in demand, thereby creating the potential for additional capacity as a result of import adjustments; and (5) potential costs which might be associated with the proposed quotas in terms of price changes and short-term changes in purchasing leadtimes appear modest.

Thank you.

Senator **Jepsen**. Thank you.

[The joint prepared statement of Mr. Arnold and Mr. Brown follows:]

Joint Prepared Statement of Fred T. Arnold and George F. Brown

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I. DESCRIPTION OF D.R.I.

Data Resources, Inc. (DRI) is an economic information service combining extensive data banks and modeling capabilities with state-of-the-art hardware and software delivery systems. DRI is the leader in developing and delivering economic information and models to a broad range of private and government clients analyzing economic policy options and industry responses. DRI maintains vast computerized data banks and specialized macroeconomic and industry sectoral forecasting systems which are used to assess the impacts of economic and financial conditions and policy alternatives on the domestic economy, on industry and groups within it, and on the international economic environment.

DRI has significant experience in applying diverse and sophisticated research tools to the analysis of public policy options. Policy analysis has been performed for a range of Cabinet Departments, Congressional offices, and Executive agencies using DRI's analytic models and data. DRI has particular strength in analyzing policy questions for the Department of Defense where a broad array of DRI models (from macroeconomic to transportation), are continually applied to the diverse policy options under consideration by the Department. DRI has also developed a specialized set of tools to disaggregate, trace, and forecast the impacts of Defense spending decisions on the domestic economy and on specific industrial sectors within it. The DRI Defense Economic Service is the result of substantial research and analysis of defense and national security issues, and testimony to DRI's continuing commitment to monitoring and projecting the economic effects of this critical aspect of public policy.

The DRI professional staff has extensive experience in combining various DRI information products to trace the broadest economic measures to the most specific industry or sectoral impact or response. In analyzing the Defense budgets, for example, DRI economists have devised linkages among the major forecasting models (macroeconomic, cost forecasting, inter-industry, and regional) to trace the effects of specific spending decisions into inflation effects, to identify supply bottlenecks and capacity constraints, and to predict impacts on employment and critical skills. DRI has performed many large scale studies which combine diverse DRI information services to depict the implications of policy alternatives for specific industries, products, regions, and price levels.

II. THE IMPORTANCE OF MACHINE TOOLS TO MILITARY PRODUCTION

The importance of machine tools for military production, clearly recognized in many government statements and programs, is underscored by data showing the large portion of aggregate machine tool consumption that is linked directly or indirectly to defense. Machine tool production for defense falls into three categories. The first two categories are the direct and indirect purchases of machine tools by the Department of Defense.[1] The third category, referred to as "induced capital" purchases, consists of purchases by defense contractors, subcontractors and suppliers for use in the production of ships, airplanes, tanks and all other weapons and military equipment. Figure A[2] shows that portions of domestic consumption of machine tools over the last six years attributable to direct and indirect defense purchases and defense-contractor purchases.

The "induced capital" consumption of machine tools shown in Figure A includes defense-related machine tool purchases on capital account by prime defense contractors and by the machine tool industry itself. However, it does not include a full accounting of all capital goods purchases of machine tools which are induced by defense final demand. The Department of Commerce has "estimated that about half the [defense] prime-contract awards are passed along to subcontractors." For example: "Subcontractors produce jet engine blades, landing gears, avionics, ball bearings and castings used in aircraft, tanks, and ships. These subcontractors are in turn supported by component and parts suppliers down to and through the basic metals industries,"[3] all of whom require machine tools as part of their capital goods components. Thus, the true induced-capital defense-related demand for machine tools is likely to exceed the amounts specified in Figure A.

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[1] Direct purchases by the Department of Defense include purchases of machine tools for government arsenals, shipyards and other defense agencies. Indirect purchases include purchases by private parties on current account (*e.g.*, purchases of machine tools by private shipbuilders for installation in machine shops on shipboard) for delivery to defense agencies.

[2] Data for Figure A were determined by Data Resources, Inc., based on the DEIMS and DIFS modeling systems. The mechanism for "translating" categories of defense expenditures into demands on private industry is based on the Department of Defense procedures.

The analysis demonstrates that, by conservative estimate, up to 20 percent of the aggregate domestic consumption of machine tools is related to defense needs even in peacetime.

The remaining portion of the domestic consumption of machine tools is of course related to civilian needs. Although some portion of the machine tool industry's production for civilian needs could be diverted to defense-related needs in a time of mobilization, a substantial portion could not be so diverted without seriously damaging the civilian economy including the essential civilian infrastructure (transportation and communications systems, etc.) that has to operate efficiently if defense production and the war effort itself are to be successful.

III. IMPORTS HAVE ADVERSELY EFFECTED THE PRODUCTION CAPACITY OF THE UNITED STATES MACHINE TOOL INDUSTRY

To demonstrate the effect of imports on the industry's propensity to invest in new production capacity, DRI has examined the investment behavior of the domestic machine tool industry for 1982 and its projected investment behavior for 1983, and has contrasted this behavior with the investment decisions otherwise indicated under the hypothetical assumption that imports were entirely excluded from the domestic machine tool market for those years. Under this assumption, there is an increase in the size of the market satisfied by domestic production of machine tools. The results of this analysis are shown in Figure B. As Figure B shows, the expansion of the market for domestic machine tools caused by the exclusion of imports would result in an increase in net capital investment of at least 50 percent above the level forecasted in the absence of exclusion and an annual increase in domestic production capacity of 9 to 10 percent.

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[3] Henry, "Defense Spending: A Growth Market for Industry," 1983 Commerce Outlook (emphasis added).

The domestic industry's normal production capacity (i.e., the economist's definition of capacity) is probably adequate to satisfy the requirements both of the peacetime defense buildup and of a limited war -- on the assumption, in both cases, that imports would continue to be available. But the industry's maximum production capacity (i.e., the engineer's definition of capacity), under full mobilization conditions, is seriously inadequate to satisfy the requirements of a large-scale conventional war.

DRI has projected that the U.S. machine tool industry together with imported machine tools, would have the capacity, in the absence of the relief requested in its 232 Petition, to supply enough machine tools to satisfy the demands of accelerated peacetime defense spending or a "Vietnam-type" limited war, in which imports are not interdicted.

Figure C shows the projected potential supply of machine tools for the years 1983 through 1987, expressed in 1972 constant dollars, with potential supply determined on the assumption that imports are unavailable in a large-scale conventional war[4] and that the industry operates under emergency mobilization conditions. The figure compares that supply with the projected demand for machine tools during the same period on the assumption that mobilization for the large-scale conventional war begins in 1983, that the war itself begins in 1984 and continues through 1986, and that demobilization occurs in 1987.

For several important reasons, the war-related demand estimates may be conservative. Among the variables which could create a greater supply/demand imbalance is the fact that a contemporary war, even if limited to conventional armaments, may occur over a shorter time frame than that which was assumed by DRI (i.e. perhaps one to two years rather than four). There is ample evidence from recent Middle East crises as well as the Falklands conflict to suggest this thesis. In this case, the surge for mobilization and military production would be significantly compressed, thereby exerting even greater initial pressures on the prewar industrial base. A second phenomenon which is surge-related, and which could lead to demands in excess of those which are depicted in Figure C, is the rate of early attrition which may be associated with today's sophisticated weaponry. Relying again upon observations from recent conflicts, the argument for massive losses of existing offensive and defensive hardware can not be overlooked. DRI has not attempted to reflect the need to produce massive amounts of replacement weapons or defense systems early in the war, since to do so would require a corollary statement of the evolution of a specific conflict scenario which was well beyond the requirements of the Section 232 petition.

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[4] It is assumed that imports and exports are cut off by war conditions.

Other obvious factors which would increase the demand for machine tools include the balance between personnel and material -- the large scale conventional war is relatively personnel intensive, and therefore may understate industrial requirements; the war, even in its peak year, requires only about one-half the percentage of GNP as did the peak year during World War II -- the simulation may have understated the overall dimensions of a modern day conflict irrespective of timing and attrition; finally, the demands do not include any requirement to arm or maintain the productive capacity of our allies, a necessity which could clearly arise.

These observations are not provided to diminish the usefulness of the work which was performed to serve as a partial basis for public debate; rather, they are identified to underscore the uncertainty which surrounds the state-of-the-art in industrial base/mobilization planning and to demonstrate that there exists a wide range of credible assumptions which would further diminish the machine tools industry's ability to satisfy emergency production requirements.

DRI has forecasted that new domestic production capacity[5] will be brought on stream, in response to aggregate demand including the increased demand attributable to the war effort, at the rate of 18.5 percent during 1983, 10.9 percent during 1984, 19.8 percent during 1985, and 15.4 percent during 1986, for an aggregate increase through 1986 of 81.4 percent. (Capacity declines by one percent during 1987, the year of demobilization.) Despite these additions to capacity, however, a tight supply situation would arise as early as 1984, and by 1985 there would be a substantial and growing gap, as Figure C shows. Backlogs and lead times would increase, disrupting military procurement. Even though military requirements would be given priority,[6] it is certain that military production would be subject to substantial, and unacceptable, delays. Moreover, given the virtual certainty that foreign sources of supply would be denied to the United States imported machine tools would not be available to fill the production "gap."

Figure D is similar to Figure C except that it assumes that the large-scale conventional war occurs during the years 1989 through 1991, with mobilization for the war beginning in 1988.

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[5] For this purpose, capacity is defined as emergency production capacity.

[6] Priority for defense-related production could be ordered under the Defense Production Act, 50 U.S.C. App. § 2071; existing machine tools could be requisitioned under that Act, 50 U.S.C. App. § 2081.

In this case, as Figure D shows, the machine tool bottleneck occurs earlier -- in 1988, the year of mobilization -- both because imports will have gained a larger share of the domestic market (in the absence of import restrictions) and because the domestic industry will have less idle capacity than it has currently.

The national-security implications of this situation are grave -- the simple fact is that the United States' ability to deter or to respond promptly and effectively to a protracted conventional war is already open to serious question.

IV. CONCLUSION

DRI has calculated the level of quotas that would be needed to induce new investment to increase the domestic production base by 10 percent by 1987 over the base that is projected to exist that year in the absence of relief. The tradeoff between imports and capacity is shown in Figure E; imports must be restricted to 17.5 percent of the domestic market in order to achieve a 10 percent increase in machine tool production capacity. Our analysis clearly demonstrates that the imposition of quotas can and will increase the domestic production base for machine tools.

If machine tool imports are limited to 17.5 percent of the domestic market in both the metal-cutting and metal-forming sectors, the resulting increase in demand for domestic machine tools will induce new investment in plant and equipment, over and above what would be invested in the absence of quotas, in the projected amount of $91 million (1972 dollars) over the five-year period from 1983 through 1987. This is shown in Figure F.

As Figure G shows, this new investment in plant and equipment will increase our domestic emergency production capacity, over and above the capacity that would exist in the absence of quotas, to the extent of approximately $434 million (1972 dollars) of annual production capacity by the end of 1987.

The additional production capacity shown in Figure G would represent a net increase of 10.0 percent in the nation's overall machine tool emergency production capacity. In the case of a large-scale conventional war for which mobilization begins in 1988, this additional capacity will enable the domestic machine tool industry to satisfy demand, including defense-related demand, during the critical mobilization year and the early stages of fighting notwithstanding the loss of imports. This is shown in the right-hand panel of Figure H. In practical terms, the "cost" of this benefit is a possible tightness of supply in the latter stages of the five-year period (before 1988) during which quotas are in place. There is ample precedent to suggest that this condition will not become constraining since the industry has demonstrated that it can operate at higher-than-normal rates when conditions require; Figure H shows that the industry's potential "engineering" supply (emergency production capacity) substantially exceeds projected demand. Moreover, it is likely that any tightness of supply could be managed -- certainly in a more orderly fashion during peacetime than after the outbreak of war -- either by proper phasing of Department of Defense procurement or, if necessary, by future adjustment of the quotas imposed on imports.

Figure I combines the data from the right-hand panels of Figures D and H. It shows the amount of domestic demand, including military demand, during the years 1988 through 1991 and compares it with the supply that is projected to be available during those years depending on whether or not quotas have been imposed during the years 1983 through 1987.

Figure J shows, on a year-by-year basis during the war years, the excess of potential supply over demand, or the excess of demand over potential supply, as the case may be, during the years 1988 through 1991 depending on whether or not quotas have been imposed during the years 1983 through 1987.

Because the domestic machine tool industry is highly competitive, the imposition of the quotas requested by the Petition will not result in material increases in prices over the levels that would be likely to occur in the absence of quotas. DRI has analyzed the rate of price increases that are likely to occur for the years 1983 through 1987 with and without quotas. Figure K shows that the projected prices for machine tools if quotas are imposed are not likely to exceed the prices that are projected in the absence of quotas by more than approximately two percent in any year. In most years, the projected price differential is negligible; factors holding down prices include competition between domestic producers, the large on-hand stock of Japanese machine tools in inventory, the idle capacity that currently exists in the industry, and continued, albeit reduced, competition from imports. Again, the flexibility of a quota system provides a possible solution for any unacceptable price pressures; quotas can, if necessary, be modified to suit future conditions.

FIGURE A

Domestic Consumption of Machine Tools
Under Recent History
1977-82

	Billions of 1972 Dollars						Annual Growth Rate 1977-1982
	1977	1978	1979	1980	1981	1982	
Aggregate Consumption of Machine Tools	2.196	2.717	3.265	3.356	3.362	2.819	5.122
Aggregate Consumption of Metal-Cutting Tools	1.630	2.084	2.530	2.716	2.827	2.354	7.625
Aggregate Consumption of Metal-Forming Tools	0.566	0.633	0.735	0.643	0.534	0.465	-3.842
Aggregate Defense-Related Consumption of Machine Tools	0.223	0.255	0.325	0.364	0.571	0.564	20.401
Direct	0.080	0.083	0.088	0.093	0.265	0.280	28.472
Indirect	0.027	0.028	0.036	0.037	0.051	0.046	10.775
Induced Capital	0.116	0.144	0.202	0.234	0.254	0.239	15.592
Defense-Related Consumption of Metal-Cutting Tools	0.177	0.205	0.262	0.302	0.489	0.486	22.468
Direct	0.066	0.068	0.072	0.077	0.231	0.242	29.739
Indirect	0.020	0.021	0.027	0.029	0.042	0.038	14.011
Induced Capital	0.091	0.116	0.163	0.196	0.217	0.206	17.789
Defense-Related Consumption of Metal-Forming Tools	0.046	0.050	0.063	0.062	0.081	0.078	10.881
Direct	0.014	0.015	0.015	0.016	0.035	0.038	21.754
Indirect	0.008	0.008	0.009	0.008	0.009	0.008	-0.033
Induced Capital	0.025	0.028	0.038	0.038	0.038	0.033	5.651

SOURCE: Data Resources, Inc., DEMIS and DIFS models (1983).

FIGURE B

Machine Tool Industry Investment Behavior Simulation
(Billions of 1972 Dollars)

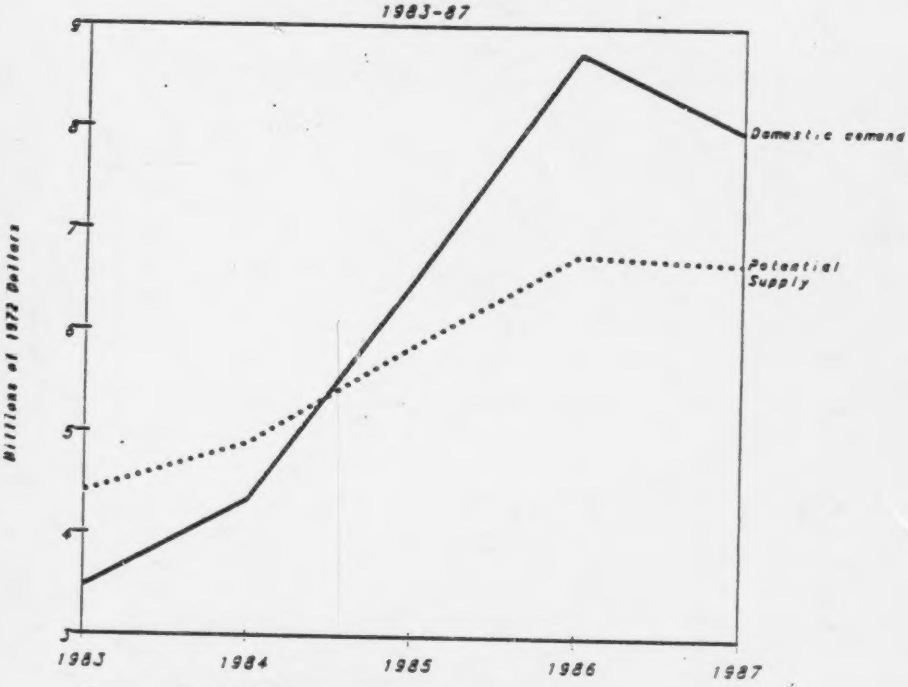
			Net Plant &	Annual Production Capacity[1]	
	Output*	New Investment	Equipment (year-end)	Efficient	Engineering
1982					
With Imports	$2.417	$0.055	$1.174	$3.258	$3.721
Without Imports	$3.163	$0.085	$1.205	$3.334	$4.041
Percentage Change Without Imports	31%	55%	3%	2%	9%
1983					
With Imports	$2.468	$0.056	$1.159	$3.254	$3.767
Without Imports	$3.259	$0.084	$1.212	$3.394	$4.142
Percentage Change Without Imports	32%	50%	5%	4%	10%

Source: Data Resources, Inc., (1983).

*Industry output includes production to satisfy both domestic and export demand for U.S.-built machine tools.

FIGURE C

U. S. Demand (a) for Machine Tools
and Potential Supply (b) of Machine Tools
Under the 'Large Conventional War' Scenario
(1972 Dollars)
1983-87



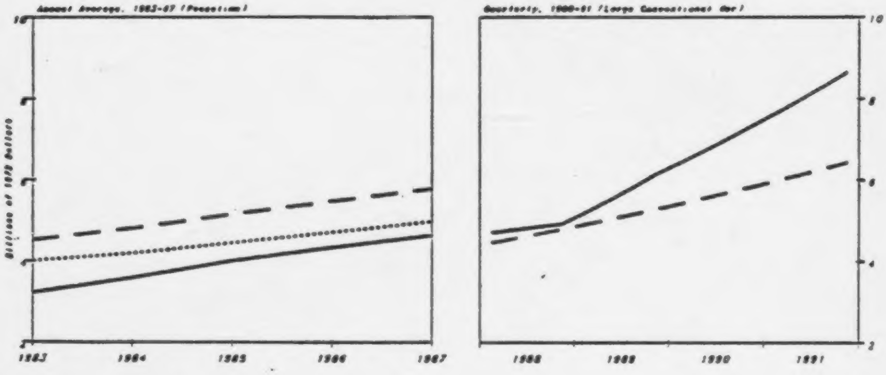
Source: Data Resources, Inc. (1983).

(a) U. S. demand is defined as domestic demand with no exports

(b) Potential supply is defined as the maximum output of the domestic machine tool industry under emergency operating conditions, with no imports

FIGURE D

U. S. Demand for Machine Tools
and Potential Supply of Machine Tools
Absent Section 232 Remedy (1983-87)
And the 'Large Conventional War' Scenario (1988-91)
(1972 Dollars)



Source: Data Resources, Inc. (1983).

Demand (a) = Line
Potential Efficient Supply (b) = Dot
Potential Engineering Supply (c) = Dash

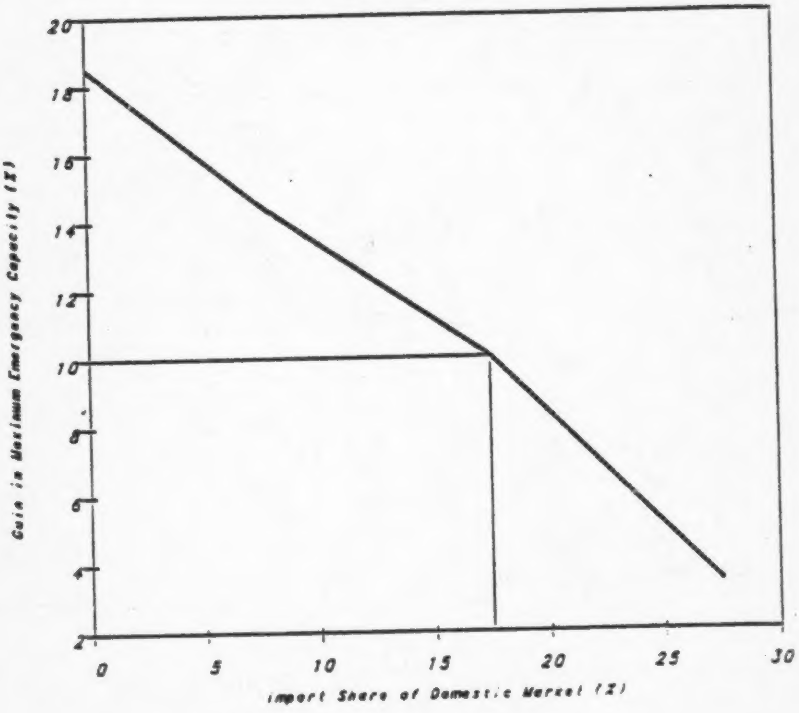
(a) U.S. demand is defined as domestic demand plus exports for the period 1983-1987 and as domestic demand with no exports for the period 1988-1991.

(b) Potential efficient supply is defined, for the period 1983-1987, as the maximum output of the domestic machine tool industry under normal operating conditions, plus projected imports absent Section 232 remedy.

(c) Potential engineering supply is defined, for the period 1983-1987, as the maximum output of the domestic machine tool industry under emergency operating conditions, plus projected imports absent Section 232 remedy; and, for the period 1988-1991, as the maximum output of the domestic industry under emergency operating conditions, with no imports.

FIGURE E

'Trade-off' Between Gain in Maximum Emergency Capacity (a) and Levels of Import Remedy (b)

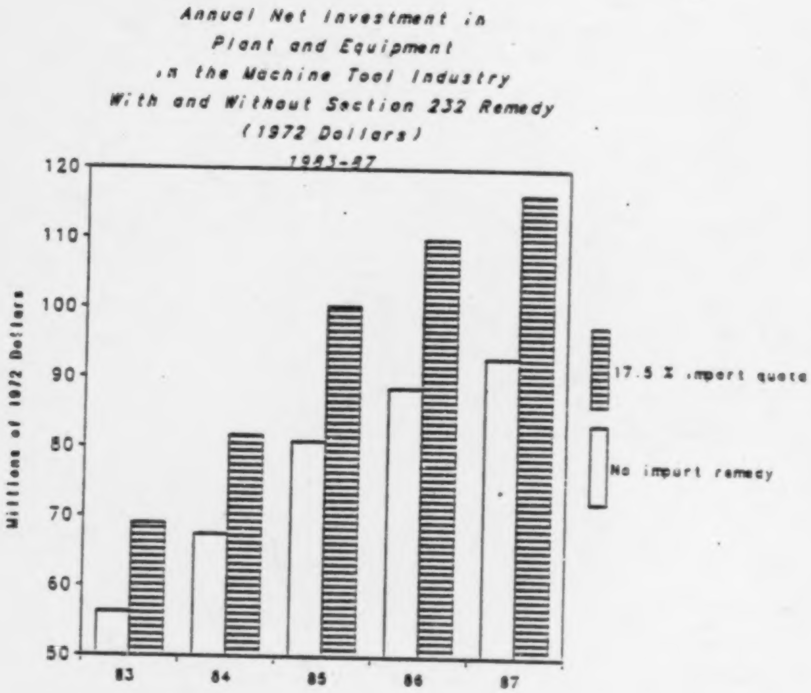


Source: Data Resources, Inc. (1983).

(a) Percent increase in maximum emergency capacity in 1987 over the amount otherwise available absent Section 232 remedy.

(b) Import quota established as Section 232 remedy

FIGURE F

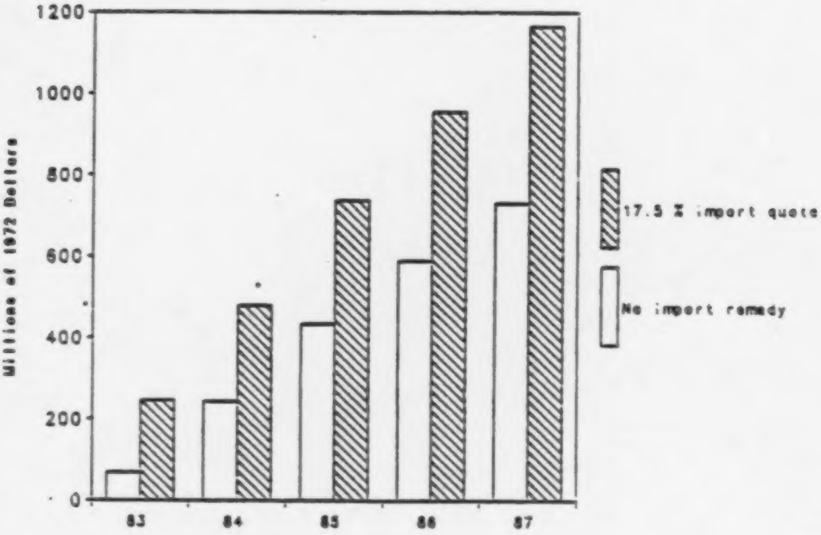


Annual Net Investment in Plant and Equipment in the Machine Tool Industry With and Without Section 232 Remedy (1972 Dollars) 1983-87

Source: Data Resources, Inc. (1983).

FIGURE G

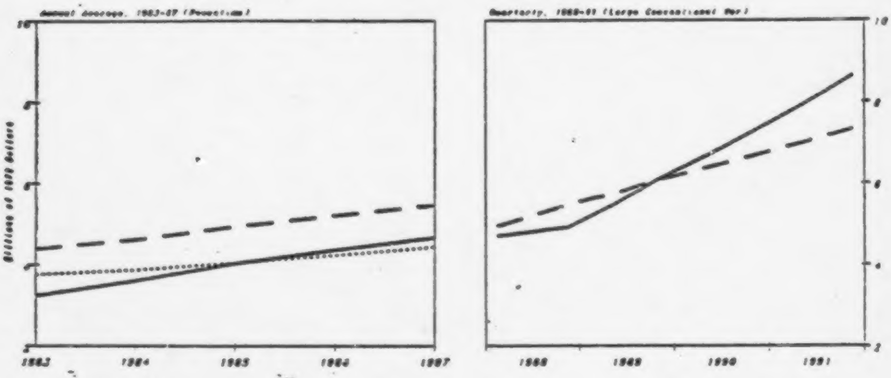
Additions to Maximum Emergency Capacity
Over 1982 Level
With and Without Section 232 Remedy
(1972 Dollars)
1983-87



Source: Data Resources, Inc. (1983).

FIGURE H

U. S. Demand for Machine Tools
and Potential Supply of Machine Tools
With Section 232 Remedy (1983-87)
And the 'Large Conventional War' Scenario (1988-91)
(1972 Dollars)



Source: Data Resources, Inc. (1983).

Demand (a) = Line
Potential Efficient Supply (b) = Dot
Potential Engineering Supply (c) = Dash

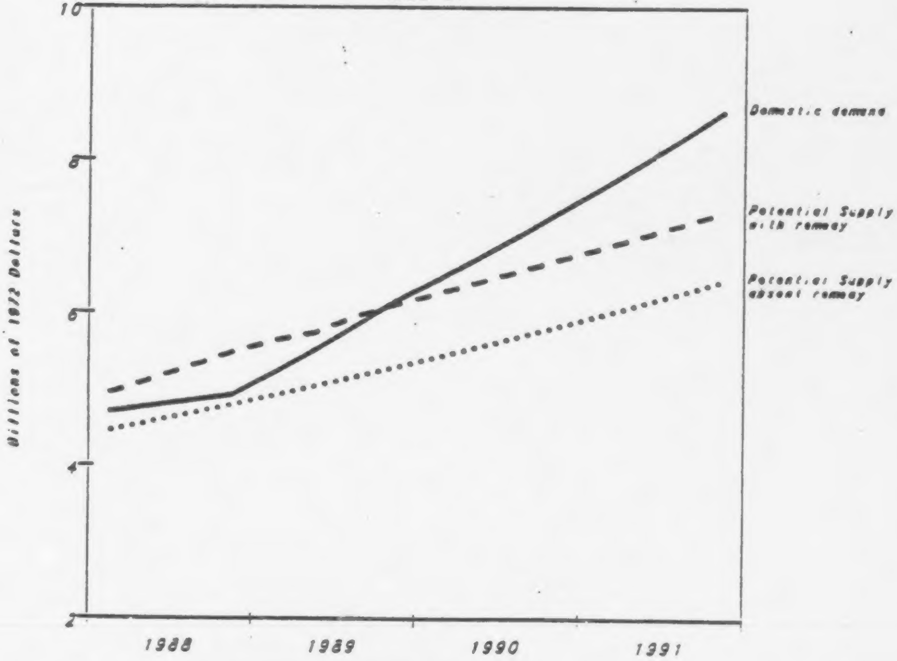
(a) U.S. demand is defined as domestic demand plus exports for the period 1983-1987 and as domestic demand with no exports for the period 1988-1991.

(b) Potential efficient supply is defined, for the period 1983-1987, as the maximum output of the domestic machine tool industry under normal operating conditions, plus projected imports with Section 232 remedy.

(c) Potential engineering supply is defined, for the period 1983-1987, as the maximum output of the domestic machine tool industry under emergency operating conditions, plus projected imports with Section 232 remedy; and, for the period 1988-1991, as the maximum output of the domestic industry under emergency operating conditions, with no imports.

FIGURE I

U. S. Demand (b) for Machine Tools
and Potential Supply (b) of Machine Tools
Under the 'Large Conventional War' Scenario
(1972 Dollars)
1988-91



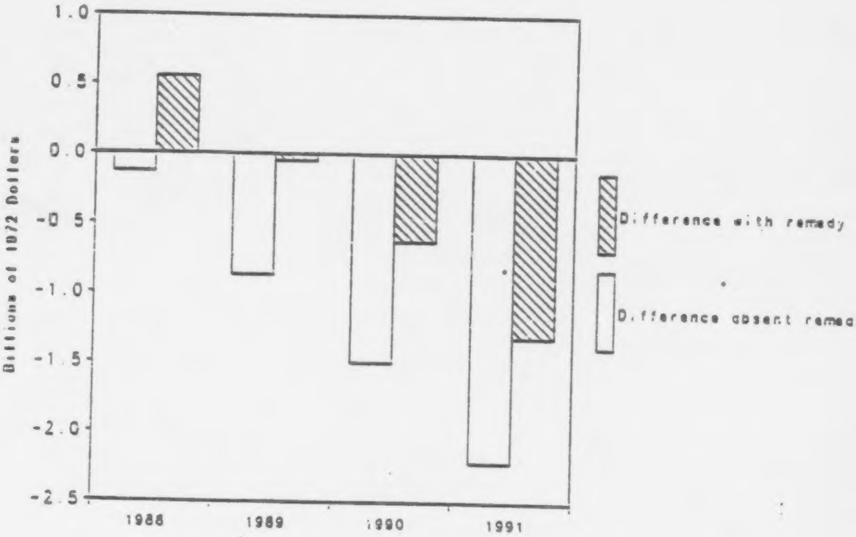
Source Data Resources, Inc. (1983)

(a) U. S. demand is defined as domestic demand with no exports

(b) Potential supply with and without Section 232 remedy is defined as the maximum output of the domestic machine tool industry under emergency operating conditions, with no imports.

FIGURE J

Difference Between Maximum Emergency Capacity (a)
With and Without Section 232 Remedy (1983-87)
and Demand (b) for Machine Tools
Under the 'Large Conventional War' Scenario (1988-91)
(1972 Dollars)

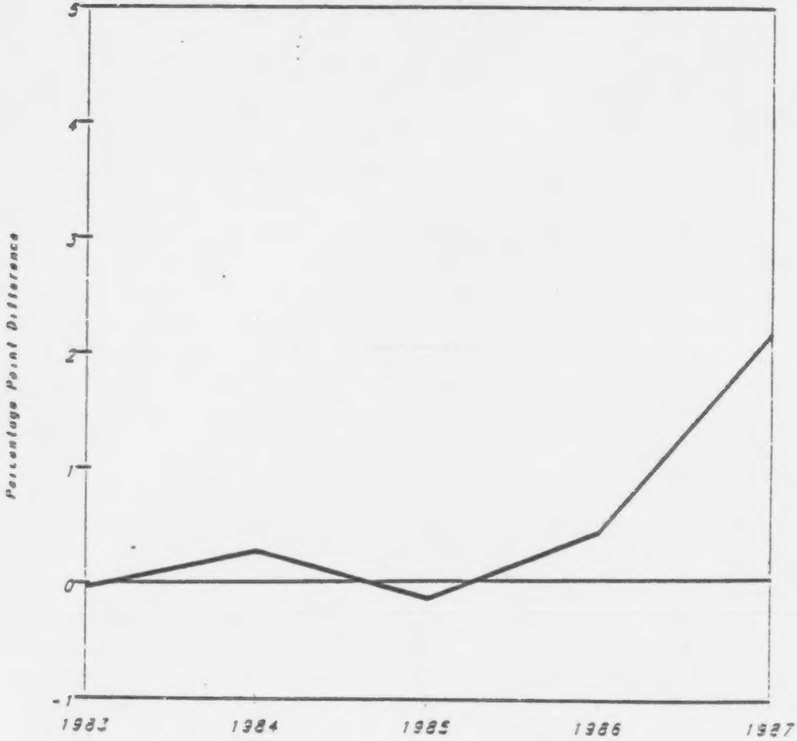


Source: Data Resources, Inc. (1983).

(a) Maximum emergency capacity in each case is defined as the maximum output of domestic machine tool industry under emergency operating conditions, with no imports

(b) U.S. demand is defined as domestic demand with no exports

FIGURE K



Difference in Annual Rate of Change
of Composite Producer Price Index for Machine Tools
With and Without Section 232 Remedy
1983-87

Source Data Resources, Inc. Cost Forecasting
Service (1983)

Senator JEPSEN. Next, Mr. John Latona. I am familiar with Houdaille Industries and also the acquisition of Viking Pump in Cedar Falls, Iowa, where I was born and raised. My great uncle was one of the original inventors in that pump, so I followed your acquisition with some interest.

Welcome to Washington. You may proceed.

STATEMENT OF JOHN LATONA, VICE PRESIDENT-LAW, HOUDAILLE INDUSTRIES, INC.

Mr. LATONA. Thank you very much, Senator. I appreciate this opportunity.

The prepared statement that I submitted pretty well tells the story of the Houdaille petition. I am just going to make a few comments this morning that relate our experience to the 232 petition and the defense posture in the United States.

Senator, as you are well aware, since 1981, this Nation has been engaged in a very significant buildup of its defense capability, and it is extremely important for us to do it. However, we have also been presently engaged in the voluntary unilateral industrial disarmament of the United States of America. If this continues, all of our efforts to rebuild the defense capability of this country will be endangered.

Let me give you one example. One of the most important, most technologically sophisticated machine tools is a complex metal cutting machine called machining centers. They are now typically computer controlled. They are absolutely essential to the manufacture of any kind of precision metal part, as you pointed out in your opening statement—absolutely essential to the manufacture of any element of our defense posture—missiles, tanks, weapons, virtually everything. They are also an essential element of what are described as flexible manufacturing systems. The automated factory of the future will be made up in large part of automated robot-assisted machining centers.

In 1976, approximately 4 percent of the U.S. machining center market was filled by Japanese machining centers. In 1981, 5 years later, 50 percent of the machining centers sold in the United States were manufactured in Japan. In 1982, 60 percent of the machining centers sold in the United States were made in a factory in Japan. It is only a matter of a very few years before the Japanese have all or virtually all of the machining center market in the United States, and there will be none, or essentially none, made in the United States.

How did this come about? Do the Japanese have a better product? Do they have better machining? In fact, they do not. Japanese machining centers are all based on U.S. designs. There is nothing made in the machine tool industry in Japan that was not made first in the United States or, in some cases, elsewhere.

How did then did they do it? Well, they did it by violating virtually all the rules that are imposed on U.S. business people. They have a cartel which is established and directed by the Japanese Government. They fix prices through that cartel. They have a subsidy, a cornucopia of benefits from the Japanese Government, including a wide variety of tax benefits, low interest loans, no interest loans, and direct outright grants from the Japanese Government, including, but by no means limited to the now famous "bicycle racing money" that amounts to hundreds of millions of dollars to subsidize the Japanese machine industry.

What the American machine tool industry is faced with is a double standard. We are required to operate under a whole host of restrictions or just plain rules of fair dealing—the antitrust laws and a whole host of others. We don't get subsidies. Our competitors are free of all these restrictions and get the host of subsidies. And for some reason that escapes me, this is all labeled free trade. It's not free. Eventually, the United States of America will pay a terrible price for it if it goes on. And it is not free even in the sense that the people who phrased that word ever meant it, because the competition we have is not operating under the rules of free trade. They are operating at the direction and with the assistance of their government.

We have made a case, we have demonstrated the facts of this. The U.S. Government chose not to act, out of a concern for the Japanese Government. We have not given up our struggle to achieve trade equity in the machine-tool industry, and I want to thank you for giving us the opportunity to get this matter straightened out. It is absolutely essential for the continued well-being of the United States, not only in terms of its defense posture, but also in terms of its ability to remain a sophisticated, high-technology economy.

Thank you, sir.

Senator JEPSEN. Thank you, Mr. Latona.

[The prepared statement of Mr. Latona follows:]

PREPARED STATEMENT OF JOHN LATONA

Mr. Chairman, in May 1982, Houdaille Industries, Inc., a diversified manufacturer of industrial products including machine tools, filed a petition with the office of the U.S. Trade Representative asking that the President deny the Investment Tax Credit to purchasers of certain Japanese machine tools. The petition was submitted pursuant to Section 103 of the Revenue Act of 1971.

In April of 1983, President Reagan denied our request for relief under Section 103. Administration officials had told us many months earlier that no action would be taken under Section 103 but that if corrective action were to be taken, it would be on the authority of Section 301 of the Trade Act of 1974, as amended. Section 301 requires essentially the same showing of unfair trade practices as 103, but provides a much wider range of remedies, including tariffs and quotas. Thus, the President's denial of our petition under Section 103 still leaves a possibility for action under Section 301 in the future.

In the meanwhile Ambassador Brock's staff and other trade officials have begun discussions with Japanese officials to learn more about Japanese industrial policies, also known as targeting policies. The Japanese have promised to "speak truthfully" about these matters, but, based on our experience in this case, we remain skeptical about just how candid the Japanese Government officials will be. We learned the hard way that precisely the right question has to be asked of precisely the right Japanese official to obtain correct pertinent information. At this point, Houdaille is awaiting the outcome of these talks and considering its options. We have not given up our fight for equitable trade relations with Japan.

Let me now put our efforts into chronological order, concluding with a description of how, in spite of the case we made, in the end the President succumbed to pressure from Japan.

Anyone wishing the full details of our description of unfair Japanese trade and industry targeting practices in the machine tool industry should read the comprehensively documented petition we submitted to the President through the U.S. Trade Representative on May 3, 1982, and later submissions we made to the Trade Representative's office. In addition to the legal analysis of our position, they contain hundreds of pages of official Japanese government documents, both in Japanese and in English translation, describing the official creation of a Japanese machine tool cartel and the wide variety of financial assistance given the cartel by the Japanese government. No one has challenged the veracity of those documents.

In addition, Mr. Copaken of our law firm, Covington & Burling, has made an extraordinarily revealing set of video tapes of his meetings with Japanese officials at technical research facilities funded and, in one case, operated by Japan's Ministry of International Trade and Industry. These tapes prove that our petition is not based on some legal abstraction. They depict in concrete terms what Japanese industry targeting means today.

My statement this morning will merely highlight our findings and describe some of our experiences as we have struggled to bring an element of equity to the fundamentally unfair battle between individual U.S. machine tool producers and the government-backed machine tool cartel of Japan.

Article after article and expert after expert is telling manufacturers that we ought to be ashamed of ourselves for letting the Japanese beat us with their superior quality, better economics, improved technology, etc., all of which have occurred by virtue of their dedication to achievement, their system of lifetime employment, etc. To all of that, we say "phooey."

In industry after industry and particularly in that segment of the machine tool industry we are most interested in, we have found that Japanese achievements have resulted in large measure from very well organized, very well implemented plans initiated by their government to target penetration by its industry of world markets -- especially the United States market because it is the world's largest.

We are a major manufacturer of technologically advanced computer controlled (NC) machining centers and punching machines. We have watched Japanese penetration in those two product lines soar miraculously from around the 4% range as recently as 1976 to approximately 60% and 46%, respectively, in the most recent period. We set out to determine how this was accomplished, for, if the trend continued unabated, the United States machine tool industry would fall mortally wounded before any action under the traditionally available trade laws could be taken.

Approximately eighteen months ago we were becoming increasingly aware of the dramatic inroads being made by Japanese machine tool manufacturers in the U.S. marketplace. Conditions have since become far worse, intensified by the economic downturn, and felt most severely by capital goods manufacturers.

Phillip A. O'Reilly, President and Chief Executive Officer of Houdaille Industries, Inc., has long believed that the Investment Credit should be limited to U.S. value added. In discussing the possibility of legislation to accomplish this, Section 103 of the Revenue Act of 1971 was brought to our attention by Jim Mack of the National Machine Tool Builders' Association. Section 103 gives the President discretion to deny the Investment Credit to foreign goods where the foreign country has engaged in policies unfairly burdening U.S. commerce.

But why turn to Section 103, unused and unheralded, when other remedies ostensibly were available? Section 103 provides a very effective remedy with maximum administrative flexibility. Proceedings under Section 201 of the Trade Act of 1974 invariably take a very long time and many of those who proved their case under 201 still failed to obtain relief. Section 301 of the Trade Act of 1974 had been invoked a comparatively few times and, although some informal government-to-government settlements were achieved, no one had been granted relief under it. There is no need to go on. Anyone familiar with the field knows that in the past the deck has been stacked against U.S. businesses seeking equitable relief from unfair foreign governmental policies and practices. The road is long and arduous, the cost prohibitive and the outcome certain only in the sense that defeat is the greatest likelihood.

We therefore decided that invoking an unused statute might enable us to move more quickly, and achieve favorable results. We also felt that the unique nature of the remedy, and the breadth of the President's discretionary authority that, incidentally, had never been delegated to any agency and therefore was devoid of any red tape, surely made swift use of this statute possible and, we hoped, more likely.

Mr. Copaken determined that our case had to be firmly based on facts rather than conjecture or strong feelings. He and Mr. O'Reilly actually went to Japan and interviewed Japanese officials. The Japanese are forthcoming only if asked precisely the right question and only if precisely the right Japanese is asked. O'Reilly and Copaken scored some direct hits. Also essential to our findings were the efforts of a leading Japanese law firm we retained to analyze and translate Japanese laws and government orders for Mr. Copaken. The results of all these efforts are now on file with the Trade Representative's office. Chapter and verse on the creation and maintenance of the machine tool cartel by MITI and the subsidization of that cartel by a bewildering variety of loans, grants, tax concessions and the now-famous bicycle and motorcycle race betting funds.

The Japanese machine-tool cartel was formed in response to the first of a series of three special laws for the promotion of the machinery industry. In enacting these laws the government of Japan launched an ambitious crusade to seize the higher value-added and most technologically advanced market segment of this fundamental industry. Although these laws were officially characterized as temporary measures, they have remained in effect since 1956 -- one "temporary" measure following on the heels of another.

The Japanese Ministry of International Trade and Industry ("MITI") used the free hand given to it by these laws to weed out manufacturers with small market shares. Each firm whose production constituted less than 5 percent of the Japanese market in a specific machine tool and less than 20 percent of the company's total enterprise was directed to stop manufacturing those tools. The market shares thereby relinquished were turned over to a limited number of larger, more successful producers. Under MITI's guidance these companies then exploited the consequent economies of scale and specialization to penetrate export markets, secure in the knowledge that these advantages would be protected against competitive erosion in the Japanese market.

In taking these actions the government of Japan catapulted its cartel into the high-technology end of the market. MITI successfully pressed the Japanese machine tool manufacturers to act jointly to concentrate their efforts in developing and producing NC machine tools. Each company in the cartel was directed by MITI to increase to 50 percent the NC share of its total production of machine tools. In addition, the cartel was directed to expand its collaborative efforts to include suppliers, customers, service, and other activities.

With the long-range goal of selectively penetrating and dominating important export markets as its guiding principle, the government of Japan devised imaginative strategies for financing this cartel with tax advantages, concessionary loans, research grants, and other direct and indirect subsidies.

In the most unusual example, nearly a billion dollars a year worth of yen generated by wagering on bicycle and motorcycle races in Japan were and continue to be made available by MITI for promoting the Japanese machinery industry, including the machine tool cartel, and the export of these products.

MITI officials confirmed the government's use of this mechanism to support Japan's machinery industry including, specifically, the machine tool segment, but downplayed its importance by quantifying the bicycle racing proceeds subsidy at less than one-half million dollars a year. In preparing our Petition we relied on those assurances, although MITI would not provide documentation in spite of our repeatedly submitted written questions.

Their assurances turned out to be false. We now have official Japanese government and private documents which reveal that in the 1979 Japanese fiscal year, some 919 million dollars were made available from wagers on bicycle and motorcycle races alone to promote the Japanese machinery industry and in Japanese fiscal year 1980, 823 million dollars. This assumes a conversion rate of 201.3975 yen to the dollar in 1979 and 229.66 yen to the dollar in 1980. In yen, the 1980 figure was actually 4 billion yen higher than in 1979. Those who manufacture other machinery products would do well to investigate how their Japanese competitors are benefitting from this annual largess.

The results of this targeting of the U.S. machine tool marketplace were dramatic. The Japanese now make over 50% of the sales in the high technology sectors of the business. Because of the government assistance they receive, members of the cartel offer

U.S. buyers good products at competitive prices with quick delivery and quick service. We have demonstrated that these positive attributes are the result of massive government assistance, not superior engineering or management. Nevertheless, there are those in our country who do not look behind the Japanese products to see the role of government subsidy.

The facts are these: Japanese machine tools are not technologically superior to those made in the U.S. In fact, virtually all Japanese machine tools are directly copied from U.S. designs obtained through licensing agreements or reverse engineering. At the direction of their government, Japanese manufacturers set out to obtain the best designs in the world. They found them in the U.S.

Their ability to deliver stems from their large inventories of machines. U.S. manufacturers generally build to order and thus have longer lead times. It does not require a marketing genius to realize that having machines in inventory gives a seller a decided advantage with buyers. However, U.S. machine tool makers were simply unable to finance the huge costs of such inventories while the Japanese were because of government subsidies.

The same holds true for service. With government help it is possible to maintain larger staffs of service people than those employed by individual private companies. The bottom line is this: The competitive advantage developed by the Japanese following 1976 to the present was not the result of superior skill and effort, but the result of a cartel with a deep pocket, in this case, the pocket of the government of Japan.

We do not view our petition as having been protectionist in any sense. We believe in free trade. We are confident that in a fair fight we can compete with any private manufacturing concern. Competing with a government the size of Japan's is another matter. As long as it provides the extraordinary range of subsidies and direction as we have revealed, we see no free trade theory which justifies the U.S. allowing its manufacturers to lose business and its workers to lose jobs. The Houdaille Petition gave the President a rare opportunity to take an affirmative action for free trade by forcing the Japanese to moderate their practices to a more acceptable level of free and fair competition.

The detailed documentation of Japan's industrial policy that we have provided transformed our case from one of parochial concern into a major opportunity for enhancing the leverage of the United States to open Japanese markets and assure that United States industry and jobs are not lost to unfair cartel competition.

Despite years of talk, the government of Japan continues to resist opening its markets in any significant way to free competition. Until the United States shifts from talk to action, it will always be so. We consider it to be tragic that such an opportunity for making free trade work has been missed.

The Houdaille Petition was the subject of much extremely heated discussion at all levels of the trade bureaucracy. Agencies involved included the U.S. Trade Representative, the departments of Commerce, Treasury and State, plus the National Security Council, the Office of Management and Budget and the Council of Economic Advisors. The departments of Defense, Labor, Transportation and Agriculture also had some input.

The issues were: are Houdaille's facts correct and, if so, what action, if any, should be taken? As the dispute wore on, Houdaille provided voluminous additional amounts of evidence. Further requests for data were made of us which were clearly unreasonable such as: what are the actual costs of making machine tools in Japan and in the United States? In addition to the massive amount of work such research would entail, it also posed obvious legal problems. We could not ask our competitors for their costs without violating the antitrust laws, yet some government officials wanted us to provide that information. After a while it became clear that these requests for additional information were adversarial in nature, designed to harass us, and not for the purpose of gaining more information.

Eventually the conflicting parties within the Administration came to a grudging unanimous agreement: the facts as alleged by Houdaille were correct and they were legally sufficient to warrant taking action under Section 301. Even with this agreement on the facts, and the law, there were those in the Administration who did not want to act. Some were opposed on ideological grounds. They felt that no action by a trading partner, no matter how unfair, could justify erection of any retaliatory trade barrier by the U.S. Others did not want to offend the Japanese, who are extremely sensitive to charges of unfairness leveled at their trade and industrial policies. Some in the Administration supported us strongly, notably Ambassador Brock and Commerce Secretary Baldridge.

In late April, it was decided finally to put the decision to the President. Given the agreement on the facts and their legal implications, officials who favored taking a stand with Japan that would enable the United States to negotiate from a position of strength were optimistic. However, an extraordinary, last-minute intervention by the Japanese government, including a personal note from Prime Minister Nakasone to President Reagan, turned the tide. Sensitive to Japanese feelings and concerned about Nakasone's chances in upcoming political tests in Japan, the President denied Houdaille's request for relief under Section 103, refrained from taking action under Section 301, and accepted in exchange only assurances from the Japanese that they would "speak truthfully" about their trade practices and industrial targeting policies.

Houdaille is not giving up. But America must wake up. We cannot have our critical industries picked off one by one in the name of free trade. American businesses and American workers cannot be burdened with a double standard which allows other nations to practice all of the elements of targeting while we remain "free." Free trade in free markets is the best economic system, but it is not now taking place. Our competitors are allowed the best of both worlds, support and protection from their government and our free markets. Unless we insist on world-wide free trade and enforce it with sanctions on those seeking to take advantage of our economy, a bleak future is before all of us. The United States must see to it that all trade takes place under the same set of rules.

Senator **Jepsen**. We will proceed with questions.

Congresswoman Holt.

Representative **Holt**. Well, I guess the question I would really like to understand is, when we talk about the impact of subsidizing our industry or restricting imports or doing all of these other things, have we looked at the total impact? I am sure this is why the President and Mr. Brock have moved very cautiously. Every time I start trying to fix something around here, everything else flies loose, and we get into real trouble with protectionism, and it starts backfiring in other areas.

So, I guess my question to you is, Are you concerned about this form of retaliation? I know we have to deal with it, that we have to find ways to cope with the Japanese targeting, for instance, the subsidization. Now, what do you think we should do? Anybody who has any thoughts on that subject.

Mr. **Blakeman**. Well, if the Japanese can declare that the lack of a strong food and agriculture industry is dangerous to their national security, I don't see how they can complain that protecting our machine tool industry which is so essential to our military and defense effort and which is so essential to the effort that the United States puts forth to protect them, can cause us a problem in our relationship with the Japanese Government.

Representative **Holt**. But you recognize that it will cause problems, that we have just recently effected a subsidized flour sale to the Egyptians and France is raising all kinds of heck about it. They are screaming, even though they have been subsidizing for years.

What about tax concessions or more generous depreciation or tax credits? Is that a viable answer to this? Could we work it that way?

Mr. **Blakeman**. We have had investment tax credits. We have a tax law that permits us to get some benefits for research and development work. But if there are no profits in the industry, it doesn't seem to me those tax benefits are going to be very effective at all. And right now there are no profits in our industry. We have 40 to 60 percent of the work force laid off in some of our critical machine tool companies. Tax benefits are really of no value at this time. You will find many of our companies have tax carry forwards that will last them quite a while now, based on what has happened in the past couple of years.

Mr. **Latona**. Congresswoman, also, the tax benefits, depreciations, the changes that went in a couple of years ago, were largely taken back, but nevertheless, those programs go across the board, and the fact of the matter is, because of the way we operate in this country, our competitors get every bit as much of an advantage over those tax law changes as domestic industry.

As far as retaliation goes, it's certainly nothing to worry about in the machine tool industry, because the Japanese don't allow U.S. machine tools that compete with their machine tools to be sold in Japan, just as they do not allow a whole host of agricultural products that compete with theirs, currently to be sold in Japan. The Japanese are absolutely dependent on us for their national defense. Just how far they would be prepared to go in retaliating against the United States in rejecting the interests of the United States will certainly be done at their own great peril.

I think we have to realize we are still, with all our difficulties, the most powerful and the most productive nation in the world, and I don't think we can continue to go around being afraid that every other country which is dependent upon us, is somehow going to reject us and hurt our feelings.

That's precisely what happened in our case. We did not want to hurt the Japanese's feelings.

Representative **Holt**. I don't think it is a matter of hurting feelings or being afraid they're going to retaliate to our great detriment, but I think there is a trade-off there in other jobs that we lose and other industries we begin to hurt, if we take this kind of step.

Now, certainly, I am seeking information. I am not advocating this point of view, but another thing is the quality of United States and Japanese machine tools. How does that compare, Mr. Blakeman? I think you commented on that.

Mr. **Blakeman**. Frankly, I don't see any difference in the quality level. I have been in this industry long enough to remember when the Japanese first copied the American machine tools, that they were not at an acceptable quality level. I can recall the first machine tools and other products that came into this country where the workers in our plants would comment on the inferior Japanese products that were bought at cheaper prices. That's not the case today. The quality levels are the same, the technology is the same. My own three small- or medium-sized machine tool companies are striving very hard to make sure that our quality and our service are impeccable, because that is all we have to sell.

We certainly can't beat them on price with their subsidies, so we are working very hard. We have recaptured the quality circle idea that originated in the United States, went to Japan, and now it has come back. We have installed quality circles in our plants. We preach quality to our workers, and they understand what we are up against, and frankly, we buy American products in all of our plants, and we buy American cars. But the quality levels are the same. The service levels are generally the same.

We are beat in the marketplace, because of the subsidies that have been given to the Japanese companies and helped them to fully automate their plants and subsidize their sales efforts through low interest rates or no interest rates.

Representative **Holt**. Would subsidies solve the problem?

Mr. **Blakeman**. We are not here to ask for subsidies.

Representative **Holt**. No; if we subsidize the industry so you could compete. There doesn't seem to be any free market anymore, anyplace.

Mr. **Blakeman**. I don't think you would get anyone fighting the U.S. Government off to subsidize our research and development or to loan us money to rebuild our plants at no interest. We would be in line down here tomorrow.

Representative **Holt**. Thank you.

Mr. Mack.

Mr. **Mack**. Congresswoman Holt, I am Jim Mack, public affairs director for the National Machine Tool Builders' Association.

The essence of what we are saying in our petition is first of all addressed to the question you raised about protectionism and retaliation. I think we would deny quite vigorously that the 232 petition under the national security clause is a protectionist measure. The originator of free trade, Adam Smith, recognized in his writing the fact that national defense is preeminent to any consideration. This is a principle which is recognized in international law and in free trade precepts.

Second, the purpose of the relief that we have requested under our petition is, as Mr. Arnold pointed out, to try to change the investment behavior of the industry—to try to get the industry to increase its capacity, which it simply is not going to do just with subsidies. Direct subsidy in whatever form, standing alone, is not the entire answer, because the market for U.S. products is simply going to continue to shrink as a result of an almost inexorable tide of subsidized imports coming into this country.

What our petition is saying is, that in the interest of national security, some kind of temporary halt must be made in that tide of imports.

Representative HOLT. But historically, the kind of problems we got into certainly is not a stabilizing factor if you get into a protectionist war throughout the world. I think that is what the administration is trying very hard to avoid.

I hear what you are saying, but I do not know what the answer to it is. And certainly, this committee is seeking to find the answer. And I think we commend all of you for bringing your points here today. But I just cannot see that saying, OK, in the guise of national security. And I think that is what I would like to do because I am a strong supporter of national security, the defense of this country. I think it is extremely important, and I recognize how serious the problem is and how critical our industrial base is today.

But I am leery because I read our history books and I see what we get into and I hear people around the world. As we meet with our NATO allies, we hear that it is a two-way street. Every time we turn around, you guys start this "Buy American," and that is the end. That is all. So it gives me some real concern.

Mr. MACK. We are concerned about the same thing. The 232 provision in the trade laws has been applied for about a dozen times in history. It is not a section of the trade law through which someone ought to be able to come in under the guise of national security. Someone should not be able to say, "You cannot fight a war without paperclips, and therefore you have to cut off the import of paperclips."

It has been successfully used only once in history when President Eisenhower and subsequent Presidents used the national security clause of the trade laws as the legislative authority for restricting imports of petroleum.

When you read the legislative history of section 232 and its predecessors in the trade law, it is clear that our industry is perhaps the only other industry that Congress had in mind when it enacted that provision. It is not a form of relief that is precedential in the sense that if you grant it to one industry, you could have people lining up behind you.

It is a very highly specific thing. The Commerce Department must find for the President, that the industry is critical to the national security of the United States and that imports threaten the national security. And only upon those findings can the President then act. And he is then required, if those findings are made by the Commerce Department and subsequently by him, to take whatever steps are necessary to terminate the threat to the national security.

Mr. **Latona**. Congresswoman Holt, unless we find some answer to this problem and some way of communicating with our allies who are doing this, we are going to continue to see industry after critical industry picked off one by one or the other of our allies.

Representative **Holt**. I agree wholeheartedly.

Mr. **Latona**. We must find some way of letting them know that we cannot and will not tolerate this.

Representative **Holt**. I think the flour sale was maybe a shot across the bow to say we are not going to, we are not just going to lie down and let this happen to us.

But I think that is all I have.

Senator **Jepsen**. Thank you.

The purpose of the hearing is to shed some light on this subject, and to get some facts we can present both to the Commission and public generally. I would just like to walk through just exactly where we are in the machine tool industry with regard to its economic health today and prospects for tomorrow, as well as its difficulties in staying afloat and remaining competitive internationally.

What is the current share of American machine tool production devoted to exports?

Mr. **Blakeman**. That figure is about 20 percent. A little less than 20 percent.

Senator **Jepsen**. Which countries are the major importers of American-built machine tools? Are they too numerous to mention, or is most of that 20 percent going to three or four countries?

Mr. **Blakeman**. While they are looking up the exact figure, one of the largest ones we have had in recent times was Mexico—for about 15 months. Now the Mexican market absolutely disappeared on us due to their internal problems. Certainly, Japan and Germany, which are the two largest exporters of machine tools into this country, are at the bottom of the list as far as buyers of American machine tools are concerned.

Senator **Jepsen**. Well, while you are checking this, let me ask, are American exporters now facing the same experience with the Japanese and other foreign countries as they are in the United States? In other words, who is your main competitor wherever you export?

Mr. **Blakeman**. Japan.

Senator **Jepsen**. Are there any other countries?

Mr. **Blakeman**. West Germany. Those are the two large ones.

Mr. **Latona**. There are a number of countries that make good machine tools. Interestingly enough, while our difficulties in the last few years have been by some folks blamed on the U.S. machine tool industry, none of those other producers were able to cash in. The English, the Germans, and so on and so forth, the increase in market share in the United States was very, very small. No basic change as opposed to these spectacular Japanese numbers. And those are the same competitors that we run into overseas typically.

And it varies depending on geography and history. Some people prefer German machine tools and so on and so forth in some countries.

But typically, it is the same range of competition and the most effective because of the support they get from the Japanese.

Senator **Jepsen**. Well, now, touching a subject Mr. Latona mentioned, regarding investment or lack of it.

In your prepared statement, Mr. Blakeman, you speak to the question of the recovery of the machine tool industry by pointing out, and I quote:

> The full implementation of the program, however, will require investment from cash flow, equity, and debt financing sources. Much of that investment cannot be arranged until the serious uncertainty about the future vitality of the machine tool industry is diminished by a grant of the requested relief.

Now, let me go on then to Mr. Latona's remarks that parallel this. In your analysis of the recent history of the machine tool industry and its currently depressed state, you emphasize the salient role of import penetration, especially by the Japanese.

In a recent article in the Wall Street Journal by Art Pine, he refers to a Commerce Department study that shows, and I quote:

> U.S. industry is too fragmented and disorganized to compete effectively against foreign producers and find that American manufacturers have failed to make the investment needed to move strongly into computer-controlled machine tools in which Japan is the leader.

So—and I say this constructively—I would like to explore to what extent the industry itself must accept responsibility for its current difficulties with respect to Japanese imports.

Mr. **Latona**. Mr. Pine has a point of view, and that article is expressing his point of view. Of course, the U.S. industry to an extent is fragmented. That is not necessarily merely by virtue of the actions of the industry. We have antitrust laws in this country, and we can point out case after case where companies have attempted to purchase smaller machine tool companies and to begin a consolidation process, and have been ordered to stop by the Justice Department or have been ordered to divest of the machine tool holdings in order to make a new acquisition.

Senator **Jepsen**. May I interrupt a minute? That is an excellent point. I hope you will continue to elaborate on it. The machine tool industry is not the only area where Government says it wants to encourage investment, that it wants to encourage expansion. Immediately, when someone tries to expand or tries to consolidate or to merge or to try to do a better job to provide full productivity, our own Justice Department literally takes them and drags them into court for doing the very same things the Federal Government has given a lot of lipservice to and told the industry what it ought to be doing.

And it is not just in the machine tool industry. Unfortunately, this is something we really need to air, and now is a good time to lay it down for the record. Continue, please.

Mr. **Latona**. The Justice Department has also threatened people who have been given consideration to applying for relief under the trade laws. They consider that a potential violation of the antitrust laws. Needless to say, it is quite a different picture than one finds overseas.

When we directly asked the Japanese Fair Trade Commission if certain practices we had uncovered were violations of their antitrust laws, they said, yes, they were. And we said, well, now we brought it to your attention, are you going to do anything about it? They said, no, we are not.

In the meantime, our Government is giving out speeches in which they tell people, if you seek relief from foreign competition under the trade laws, you will be considered potentially in violation of the antitrust laws. So that is the one side versus the other.

With regard to a more serious point, I believe, was the remark that Mr. Pine made about investment. And he is absolutely incorrect there. Greater reinvestment in the machine tool industry up until the last couple of years when the bottom fell out of everything, but through roughly 1980 or 1981, the rate of reinvestment in the machine tool industry was well ahead of U.S. industry as a whole, and even ahead of that of the automobile industry when they were going through forced draft reinvestment in order to cope with the change in fuel requirements and the need to downsize their automobiles. And those figures are available to Mr. Pine, had he chosen to seek them out.

The fact of the matter is that in the late 1970's and roughly up until about 1981, the machine tool industry was making very significant investments in larger plant facilities and more sophisticated machinery, including, of course, being its own best customer for more sophisticated machine tools.

And the remark about the Japanese being ahead of us in computer-controlled technology, again it is simply not the case. Computer-controlled technology was all developed in the United States. The Japanese very skillfully and again with the assistance of a large amount of money they get from their Government, were able to pick up on that technology very, very quickly and bring it to application very quickly. But it was already underway and was developed here in the United States.

Senator JEPSEN. Can we interrupt you for a moment, Mr. Latona. There seems to be some confusion over the relative levels and types of so-called subsidization of the U.S. manufacturers and the Japanese manufacturers, respectively.

Can we get, for the record, the current program funded by the Department of Defense and other Federal agencies which directly benefit the machine tool industry in this country?

Mr. LATONA. Chuck Downer, I believe, has that information.

Mr. DOWNER. I am recently retired from the Defense Department in the Office of the Secretary of Defense. I was responsible for the DOD manufacturing technology program, which is the agency within the Defense Department that in years past, in the middle of the 1950's, did give some support in the research and development area to the development of new American-controlled machine tools to the amount of approximately between $2 and $3 million. Of course, the dollar was worth a lot more then than it is now, but still, it was a very modest investment, in conjunction with the Massachusetts Institute of Technology, for the development of American-controlled machine tools.

After that was accomplished, and, of course, that new development was picked up by industry, the Defense Department has really not given any major help to the machine tool industry. In fact, I was, as I said, responsible for the DOD machine technology program over the last 15 years, and to my knowledge there has been no direct assistance to the machine tool builders. There have been some instances where development of new cutting bits and new cutting oils and things like that were done, but this is done through the major prime contractors. As far as direct help to the machine tool industry to develop new technology or any new developments, it has not been done.

Senator **Jepsen**. Recently, the National Academy of Engineering released a report entitled "The Competitive Status of the U.S. Machine Tool Industry." The study made several recommendations for improving the health of the industry but very explicitly stopped short of recommending any sort of Government intervention.

There seems to be a variance with the findings of the National Machine Tool Builders' Association in their section 232 petition. Would you give your views on the National Academy of Engineers report?

Mr. **Blakeman**. I haven't seen the report. I have heard about it, just the last few days.

Mr. **Mack**. Mr. Chairman, the report, as you indicate, quotes people in the industry.

It was a project that extended over a several-year period and was based on data that was a couple of years old. It was entirely correct at that time, and quoted people in the industry at that time as saying they were not in favor of import quotas. There were a number of suggestions that the report made about governmental programs—passage of increased incentives, tax benefits, improved depreciation, reforming the export laws, and passing product liability legislation—all of which we very strongly support.

I think both the people who prepared the report and certainly the industry participants in it were not aware at the time that this report was being prepared of the extent of the subsidization that was occurring in Japan and what the results would be. We are now seeing what those results are today, and projected on into the future. The Commerce Department itself has projected that import penetration is likely to increase by about 7 percent in 1983, and 10 percent or so in 1984.

Our own petition, using the model the DRI prepared, assumes an increase in import penetration level of substantially less than that.

The report that you mentioned did, as I said, come up with some conclusions that we don't agree with today. But most of the data that the report produced was accurate at the time it was prepared—over a year ago. But the report was printed in February or March of this year.

Senator **Jepsen**. I want to explore additional dimensions for the record besides the direct implications for national security.

I think you have made your case for the defense needs of this country and the importance of the machine tool industry to the defense industrial base. It's the jugular vein of our defense industry. You have made that case well, but I want to make sure we have the total picture in the record.

One concern that is raised, whenever trade barriers are discussed with respect to high-technology industry, Mr. Arnold, is the danger of putting a fence around an industry and, by removing the pressure of competition, allowing the industry to stagnate.

Mr. Arnold, could you explain in more detail DRI's assessment that machine tool manufacturers of the United States will undertake a substantial increase in productivity and expanded capacity should your 232 be approved?

Mr. ARNOLD. Yes, sir. We have examined the investment behavior of the industry from financial records publicly available which, although small in number, comprise a very large percentage of the industry's total production. In examining the relationship between investment, retained earnings, size of the market, we determined that the industry did invest, as Mr. Latona pointed out, rather heavily in the late 1970's and 1980's.

The industry also, if you look at it over a longer period of time, has been subject to a more cyclical turn in the demand for its output than have other manufacturing sectors in the United States, and for that reason, it doesn't sustain an investment equivalent to an industry perhaps like high technology where the market is growing very rapidly and almost more rapidly than the production base.

But the industry's investment propensity has been demonstrated over the years. What we have done is to examine the relationship between changes in the size of the market with appropriate lags—and those lags are rather long for the machine tool industry in the ensuing investment.

I believe that the industry has been cautious in its prior investment decisions because of the large, cyclical and the overburdening costs that can be associated with unused capacity. And for that reason, anything that reduces the cyclical nature of demand ought logically to lead in the longer term to a larger investment behavior.

We haven't assumed anything in that regard, but it seems intuitively obvious that if some of the ups and downs are taken out of the swings of the market that the industry is going to be able to establish a more secure investment profile.

Mr. LATONA. Senator, with regard to competitiveness, I would like to turn one of those things Mr. Pine referred to as one of our defects and make it into a virtue here. The fact is there are a large number of machine tool manufacturers in the United States and even with the restrictions on foreign imports that are requested here there are still going to be plenty of very, very vigorous competitors within the United States. And there will not be any stagnation taking place. There is going to be a lot of slugging still going on. All of us have become a lot leaner in the last couple of years, and I don't think there is going to be any likelihood of change in that regard, regardless of the grant of 232.

Senator JEPSEN. Well, this 232 application addresses itself exclusively, does it not, to the import problems and trying to preserve a domestic machine tool production capacity. Is that the thrust in one line? Or what would you say the 232 is asking for, Mr. Mack?

Mr. MACK. Senator, I think what we are asking is that the President do what is required to preserve an industrial base of machine tools in this country which is critical for the national security of the United States both in the event of a protracted conventional conflict and as a deterrent to a war occurring.

Senator JEPSEN. But essentially what you are asking to be done is that we provide—we impose a quota on imports; is that it?

Mr. MACK. Yes, sir.

Senator **Jepsen**. Anything additional?

Mr. **Mack**. That is what the petition is asking for.

Mr. **Arnold**. Senator, a quota on the share of consumption rather than an absolute level on imports. In that sense, it's similar to the recent steel decision where the quota was determined by domestic consumption rather than a priori set at a prescribed level.

Senator **Jepsen**. Were there any other alternatives examined by the machine tool industry other than the 232 route or the imposition of quotas on imports for solving the economic problems of the industry?

Mr. **Arnold**. There were none evaluated by the Data Resources. We spent a great deal of time trying to establish models and an understanding of the dynamics of the industry, but in terms of a rigorous assessment of the alternatives, the 232 was where we devoted much of our attention.

Senator **Jepsen**. Well, in discussing the domestic machine tool industry's response to the challenge of foreign imports, Mr. Blakeman, you mention in your statement the recommendation of the NMTBA/Japanese study mission. The recommendations include an aggressive investment in new manufacturing technology, investment in research and development, improved quality control, work force motivation programs, and aggressive export efforts.

What has been the scope of industry's efforts to implement these recommendations? First of all, are these recommendations sound? Are they good guidelines to follow?

Mr. **Blakeman**. You bet they are. It has been very difficult. We have been talking about depression, not recession. The depression in our industry, and particularly in the last 2 years. Our financing in the self-help area must come from profits, and there have been no profits to speak of in the last 2 years, so it's very difficult for us to implement some of these programs. We have been here in Washington before.

I have been down here trying to help save the Eximbank, for example. I testified down here on increasing the lending authority of the Eximbank. We support many of the efforts going forward in the creation of a higher level of authority for exports in this country. We support some of the work we know you have done. We currently have a survey being conducted in our industry on self-help. We will have the results of that in about 2 weeks. If, as you mentioned, the record will still be open, we would like to submit the results of that survey that is taking place at the present time.

[The following survey was subsequently supplied for the record:]

THE U.S. MACHINE TOOL INDUSTRY HAS UNDERTAKEN SUBSTANTIAL INITIATIVES TO HELP ITSELF

Notwithstanding currently discouraging economic circumstances, the U.S. machine tool industry has mounted a vigorous campaign of self-help. As even JMTBA acknowledged earlier this year, the U.S. machine tool industry is "[l]earning its lesson from past downturns and from the stiff competition provided by foreign manufacturers."[1] The relief that NMTBA requests would complement the industry's self-help initiatives by giving those initiatives time to take hold and product results.

The description of U.S. machine tool companies' self-help such initiatives that follows draws upon annual reports of publicly traded machine tool companies, personal interviews with executives of certain of the larger machine tool manufacturers, testimony of machine tool executives before the International Trade Commission on June 28, 1983, and letters from executives of 26 machine tool companies that represent a cross-section of the U.S. industry and its approaches to self-help.

The goal of the self-help initiatives is an industry that will be fully competitive in world markets. As representatives of the U.S. industry forthrightly acknowledged in the report of the

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[1] Comments of Japan Machine Tool Builders' Association to the International Trade Commission, Competitive Assessment of the U.S. Metalworking Machine Tool Industry (No. 332-149), p. 38 (Feb. 3, 1983).

Japanese study mission published in September 1981,[2] achievement of this goal requires that U.S. producers must lower unitproduction costs, increase quality and service and continue technological innovation by:

- Development of programs to motivate, build trust and instill pride in the U.S. machine tool work force, seeking a more cooperative and less adversarial relationship between labor and management in order to achieve greater productivity.
- Aggressive investment in innovative production technologies, including automated, unmanned, flexible manufacturing systems (FMSs) sacrificing, where necessary, near-term profit for long-term gain.
- Sustained strong investment in research and development to devise new products that are durable, productive and efficient, and technologically advanced.
- Emphasis on the quality of U.S. machine tools and responsiveness of U.S. builders to customer needs

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[2] NMTBA Japanese Study Committee, "Report: Meeting the Japanese Challenge" (1981). The report followed a two-week on-site examination of the technologies, production methods and products of the Japanese industry by leaders of the U.S. industry. The purpose of this study mission was to understand the reasons for Japanese successes.

in the design, manufacture, application and servicing of American machine tools -- paying close attention to changing customer requirements.

-- Pursuit and cultivation of all feasible opportunities to market American machine tools worldwide.[3]

There is a consensus in the industry that these initiatives must be pursued as a matter of highest priority.

In addition to pursuing these goals, members of the American industry have made painful economic choices in face of the current recession, closing older plants and permanently reducing employment. Depending upon the amount of investment in modern production equipment that follows, these actions are the harbinger of either a highly productive and competitive domestic machine tool building industry, or one that is severely diminished.

A. Human Capital -- Labor Relations

Machine tool builders are trying to improve productivity through better motivation and training of employees. Some companies have instituted profit sharing programs and/or employee stock ownership plans to give their workers a direct stake in the companies' prospects. Other have emphasized improved training programs. Examples of such training programs include: (i) providing an opportunity for all workers to be trained in the use and programming of CNC equipment -- even if not required by their current jobs; (ii) increasing employee skill levels through use of "work centers," in which employees work together as a team, learning to operate all machines in the particular work center; (iii) reimbursing employees for the costs of any training or schooling completed outside the plant; and (iv) employing full time training managers to design and administer apprenticeship programs to allow upgrading of employee skills.

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[3] Significantly, the report did not recommend import controls against foreign competition. However, in a comment appended to the Commission's Report, Nathaniel S. Howe, the Mission's Chairman, stated that if foreign competition were seriously to affect the health of the domestic tool building industry, it would then need to seek temporary help from the United States government on national security grounds. "Meeting the Japanese Challenge" a report prepared by the Japanese Study Mission of the NMTBA, p. 8 (Sept. 14, 1981).

Many companies have instituted routine labor-management meetings. At such meetings, management briefs employees regarding capital spending plans, the financial condition of the company and the financial outlook. Candid discussions of this sort have been especially important during the current extreme recession. These meetings provide an opportunity for employees to discuss work-related problems and to question top management regarding a company's plans and prospects. An example is White-Sundstrand's policy that top management meet with all employees at least once a year to review the company's "Five Year Plan" and discuss in detail the company's strategy, market, product development and organizational plans, and resulting employment prospects.[4]

However, commitment to enlightened employee relations does not require, or even countenance, a supine posture in the face of unreasonable union demands, especially with respect to work rules that can seriously restrict the potential productivity of U.S.

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[4] See testimony of Michael W. Davis before the International Trade Commission, June 28, 1983, p. 4.

machine tool building companies. In some cases, unions have agreed to concessions to improve the competitiveness of U.S. machine tools.[5] In other cases, U.S. machine tool manufacturers, including White-Sundstrand and Brown & Sharpe, are enduring strikes instead of conceding on the critical issue of flexibility in the use of labor.

B. Capital Investment and Productivity

American machine tool builders realize the further modernization and automation of production facilities are required if they are to remain competitive. As the letters indicate, this realization is not belated; during the period 1976-1981, capital investment in the machine tool industry grew at twice the rate for all other manufacturing in the United States.[6] Although this rate of investment has been affected by the current deep recession in the industry, investment continues in the most sophisticated equipment such as flexible manufacturing systems and CAD/CAM.[7]

According to its 1982 annual report, Cincinnati Milacron has recently spent $26.7 million to modernize its facilities through installation of flexible manufacturing systems and CAD/CAM. The company has budgeted $12.5 million to continue this modernization during 1983.

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[5] Testimony of W. Paul Cooper before the International Trade Commission, June 28, 1983, Transcript of Proceedings, Competitive Assessment of the U.S. Metalworking Machine Tool Industry, (No. 332-149), June 28, 1983, p. 36.

[6] Testimony of Nathaniel S. Howe before the International Trade Commission, June 28, 1983, p. 4.

[7] *Id.*

According to its 1982 annual report, the Monarch Machine Tool Company has spent $4.0 million to add to its capacity in Sidney, Ohio, to build CNC vertical turning machines.[8] Another company is planning a $2.8 million technology center. According to Charles Ames, President and Chief Executive Office of Acme-Cleveland Corporation, speaking at a December 1982 machine tool forum sponsored by Paine Webber, that company is constructing two new plants as a part of a $6.4 million program to increase productivity.

Many companies continue to invest in new machines, albeit at a reduced rate, in order to improve productivity, to increase the quality of their products and to shorten delivery times. For instance, during the past five years, White-Sundstrand has consistently invested in new machinery and equipment at a rate of three to four times depreciation, and it intends to sustain or increase this rate of investment in productivity improvements.[9] The Ingersoll Milling Machine Company recently received an award from the Society of Mechanical Engineers for its leading role in developing and installing computer-integrated manufacturing in its Rockford, Illinois plant.[10]

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[8] Monarch 1982 Annual Report, p. 16

[9] Testimony of Michael W. Davis before the International Trade Commission, June 28, 1983, p. 3

[10] Commline, the Journal of Computerized Manufacturing, May-June 1983, pp. 10-11. In addition, NMTBA has promoted, among its members, investment in and installation of manufacturing process improvements. For example, it recently sponsored a conference on "Manufacturing Management in Today's Economy" involving discussion of topics such as the use of flexible manufacturing systems, the potential of robotics for machine tool manufacturing, the rise of computer aided design and the costs and benefits of achieving better quality control.

C. Research and Product Development

Given the rapid advances in technology that are affecting the industry and its customers, expenditures for research and development are the lifeblood of the machine tool business. To compete effectively in the domestic and export markets, the industry must retain the ability and the incentive to continue and increase its R&D expenditures. If the industry's sales and profits continue to decline, however, this will become impossible. The result will be a vicious circle in which declines in sales and profits will retard technological advances, causing further declines in sales and profits, with the cycle continuing until the industry has fallen irretrievably behind in foreign competitors. The risk that the domestic machine tool industry may thus be eclipsed by its foreign competition -- as other once-strong United States industries already have been -- has obvious importance for the national security.

Many companies have continued significant research and development expenditures, notwithstanding severe economic stringency. According to Laura Conigliaro, machine tool analyst for Prudential-Bache Securities, "a number of manufacturers have increased their research and product development budgets, despite slack sales and revenues, in order to be prepared for a rebound."[11]

Cincinnati Milacron has just completed a $6.8 million research center at its Cincinnati headquarters.[12] Similarly,

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[11] American Metal Market, June 13, 1983 at p. 9A (emphasis added).

[12] See Cincinnati Milacron 1981 Annual Report, p. 29.

Ex-Cell-O Corporation has established a new technology center for machine tool research and development.[13] The Monarch Machine Tool Company is adding a new engineering development laboratory to its Sidney, Ohio facility,[14] and South Bend Lathe, Inc. has recently established an engineering group in its research division dedicated exclusively to product innovation.[15]

The results of commitments to R & D have been continued new product introductions during the recent and continuing machine tool recession. In addition, work is ongoing on product lines that will be introduced in the future. Cross & Trecker, for example, plans to introduce in 1984 a new generation of flexible manufacturing systems that will significantly advance the state-of-the-art.[16]

Notwithstanding allegations to the contrary, American machine tool producers are retaining a technological lead.[17] In the important growth field of flexible manufacturing systems (FMS), Americans' technological capabilities in machine tool manufacturing, component hardware and software and robotics, place American manufacturers in a good position for potential success.

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[13] Ex-Cell-O 1982 Annual Report, p. 5.

[14] Monarch 1982 Annual Report, p. 21.

[15] Personal communication to Covington & Burling from J.R. Boulis, President of South Bend Lathe, Inc.

[16] Testimony of Richard T. Lindgren before the International Trade Commission, June 25, 1983, p. 3.

[17] Testimony of Michael W. Davis before the International Trade Commission, June 28, 1983, pp. 7-8. See also Testimony of Richard T. Lindgren before the International Trade Commission on June 28, 1983, pp. 2-3.

American computer numerically control (CNC) machine tools and technology are equal to or better than those made in Japan.[18]

D. Responsiveness to Customers

American machine tool builders have substantially increased their responsiveness to customers. Several companies have conducted extensive efforts to determine what innovations and adaptations will be needed to meet the needs of customers in the future. For example, Cross & Trecker Corporation has invested much of its engineering staff's time in learning the specifications of the machine tools and manufacturing systems that its customer industries anticipate requiring in the next decade and beyond.[19] Similar customer surveys allow companies with inventories to alter inventory levels on the basis of better market data.

American companies have improved their delivery of spare parts to reduce the downtime of their machine tools on customer premises. Some companies have installed computer systems to handle spare parts orders and now can ship spare parts within 24 hours of client orders. Similarly, some companies have built diagnostic systems into their machine tools that permit immediate telephonic communication of the source of the malfunction from the machine to the companies' engineering staffs.

Many companies now run regular customer training schools on programming and maintenance of the machine tools that they produce.

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[18] *Id*. at p. 6.

[19] Testimony of Richard T. Lindgren before the International Trade Commission, June 28, 1983, p. 3.

Cross & Trecker has developed detailed seminars for customers on the advantages of flexible manufacturing systems, and a team of Cross & Trecker representatives has given such seminars to customer companies.[20] In addition, many companies have established financial subsidiaries that enable their operating units to offer both installment and lease financing at highly competitive rates.[21]

Most companies have increased their efforts at quality control. Suppliers are held to stricter quality standards. The number of quality check during construction, and the comprehensiveness of checks during the testing of completed machines, have been increased. Some companies offer incentive to employees for meeting quality goals. Some have programs to follow the performance of a machine tools after it has been installed on a customer's premises.

All companies recognize that lead times must be kept reasonably short, and much shorter than they became in 1980-81. To that end, some companies have begun to produce machine tools for inventory.

E. Aggressive Domestic Marketing

Increasingly, companies are making heavy commitments of their engineers' and other employees' time to explain the vast potential of modern machine tools, especially in FMS applications for each customer's specific needs. Because FMS requires a dramatically new approach to manufacturing operations, this is nothing less than a serious effort at proselytizing the companies that account for much of the United States' industrial base, in an effort to persuade them of the net benefit of investing in highly productive and flexible applications of modern machine tools. In the past year, the senior executives of a significant number of machine tool companies have undertaken this effort, in the hope that it will produce new orders at the end of the recession.

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[20] Id. at 6.

[21] Id. at 7.

So that both their sales and service staffs will be closer to customers, some of the larger U.S. machine tool companies that do not sell through distributors are opening large regional centers in major metropolitan areas. Cincinnati Milacron, for example, will open its fifth regional sales and service center this year. White Consolidated Industries is building one in Southern California.

Some companies have developed "economy lines" to meet foreign competition.

F. Export Promotion

In light of the current levels of import penetration in American machine tool markets, expanding exports of American-manufactured machine tools is more important than ever. Moreover, the February 1983 report of the Machine Tool Panel of the National Academy of Engineering regarding the machine tool industry recommends strengthening export performance by the industry. A number of the attached communications from individual companies affirm the industry's recognition of the importance of export efforts. Some have recently employed foreign marketing experts and have exhibited at overseas machine tool shows. Others have signed on additional foreign distributors and have spent significant amounts to educate those distributors about the merits of their products. White-Sundstrand has testified that it is "forging ahead with plans to market FMS and CNC machine tools in the European Community by establishing sales and service centers in key market[s]."[22] Similarly, Cross & Trecker is carrying out "a systematic long-range program to strengthen [its] world sales presence."[23]

The NMTBA emphasizes assistance to its members in securing export market opportunities. It maintains an international trade department; conducts international market research; sponsors expositions on behalf of the industry at foreign machine tool shows; and brings large groups of foreign visitors to the International Machine Tool Show sponsored every two years by NMTBA. Three professional trade specialists employed by the Association spend all their time either traveling overseas to promote United States machine tool products, conducting workshops to train member companies how to deal with the complexities of international trade, or consulting informally with company representatives about foreign business opportunities.

NMTBA collaborates with the Department of Commerce in conducting export seminars to educate United States manufacturers on export opportunities and techniques. The Association recently sponsored a seminar for machine tool industry members regarding the Export Trading Company Act of 1983. In 1982, the Association sponsored the most expansive machine tool show ever held in Mexico and in March 1983, conducted the first formal exposition of American machine tools ever held in the Peoples' Republic of China.[24]

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[22] Testimony of Michael W. Davis before the International Trade Commission, June 28, 1983, p. 6.

[23] Testimony of Richard T. Lindgren before the International Trade Commission, June 28, 1983, p. 7.

Notwithstanding the high priority accorded to export promotion by the Association and many of its members, there are serious impediments to increasing United States exports that are beyond the control of the industry. As summarized in the recent testimony of Mr. Lustgarten,[25] these impediments include the competitive disadvantage suffered by United States firms because of the strength of the U.S. dollar in relation to foreign currencies and the trend of foreign countries to close their markets to U.S. builders through various nontariff policies. As reported by Mr. Lustgarten, "[n]ationalization and/or consolidation efforts are underway in France, Spain, U.K. and several other European countries effectively closing the markets to U.S. builders."[26]

Moreover, a major potential market, Eastern Europe and Russia, has been effectively closed to U.S. builders by stringent and sometimes capricious export control policies of the United States. Records of the Department of Commerce show that in 1982, the Soviet

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[24] The vigorous efforts of the NMTBA to assist its members in obtaining export sales are elaborated in the testimony of James A. Gray, President of the NMTBA, before the International Trade Commission on June 28, 1983, at pp. 3-5.

[25] Statement by Eli S. Lustgarten, July 26, 1983, p. 5.

[26] Id. Specifically, Ingersoll Milling Machine Company has complained of exclusion of American machine tools from French markets.

Union imported $960 million worth of machine tools.[27] Of this amount, only $1.3 million worth -- comprising 12 machines -- was supplied from the United States.

Thus, while the desirability of expanding U.S. exports of machine tools remains indisputable, this goal is increasingly difficult of accomplishment. Nevertheless, members of the U.S. industry will continue to strive for export sales wherever serious economic and political obstacles can be overcome.

G. Personnel and Facilities Retrenchment

A necessary and difficult part of the industry's efforts to help itself in the last two years has been retrenchment. In order to minimize losses in the current economic climate, many companies have been forced to reduce employment. For instance, Acme-Cleveland's employment has fallen from 6,300 at the end of 1980 to 2,500 at the end of April 1983.[28] As part of theirefforts to consolidate operations and to continue automation, Cross & Trecker has reduced employment from 4,600 to 2,600 and the company plans to operate in a less labor-intensive mode once the economy recovers.[29] Gleason Works has recently reduced its workforce from 4,800 to 3,900 and has lowered employee compensation.[30]

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[27] Department of Commerce, Export Report, Series EM-522 (1982).

[28] Testimony of W. Paul Cooper before the International Trade Commission on June 28, 1983, p. 5.

[29] Testimony of Richard T. Lindgren before the International Trade Commission, June 28, 1983, p. 5.

[30] Gleason Works 1982 Annual Report.

Other companies, have frozen salaries, reduced fringe benefits, eliminated overtime and shortened work schedules.

Similarly, companies have been seeking to improve productivity by closing or attempting to dispose of marginal manufacturing facilities. White-Sundstrand is redeploying its assets away from low technology machine tools such as surface grinders and manual lathes, in order to modernize its facilities for the manufacture of CNC machine tools with FMS applications. Reducing the high fixed cost associated with single purpose machine tools by installing flexible automation is the company's number one priority.[31] Ex-Cell-O has closed or consolidated excess or marginal operations so that the identifiable assets of its industrial equipment segment declined from $258 million in 1980 to $158 million in 1982.[32]

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[31] Testimony of Michael W. Davis before the International Trade Commission, June 28, 1983, p. 5.

[32] Ex-Cell-O 1982 Annual Report at pp. 4, 14.

Mr. **Blakeman**. But frankly, we are very lucky out in Cedar Rapids and in our two other plants in Chicago and Springfield, N.J., because the Japanese have not targeted us yet. They are small niches in the machine tool industry that don't produce high quantities of a given machine tool, and thank godness we are still alive, for that reason. But, Senator, if the Japanese targeted in on the machine that we build in Cedar Rapids, with what I know about their subsidy programs—and a lot of this has come out on the record in the recent work that Houdaille Industries has done—if I found that we were one of those targeted companies they were going to shoot a rifle shot at, I would think very quickly about moving over into some other business. I don't think there is any way that a small- or medium-sized company can combat their targeting tactics and the money that is behind it. I am not smart enough to beat them.

Senator **Jepsen**. Well, Mr. Blakeman, you know, I am probably a little more familiar with your company for the reasons mentioned earlier and the reason we gave you an award is because you had considerable success while the industry generally is depressed. You have been rather successful in resisting this general trend in industry. Do you attribute this to your foreign sales?

Mr. **Blakeman**. I attribute it to two things. We have a little niche with our product lines, particularly the product line that we build out in Iowa. We just confirmed a month ago that the Japanese, for example, are doing the same things in other key market areas that they are doing in the United States. We used to run up against that in Mexico, in South Africa, and other places in the world. And when they target, you can't sell. You can't beat them. It is very difficult to beat them. They haven't targeted my kind of machine, so we have been able to sell, first in Mexico and in South Africa and other places; and, as you know, last year, 1982, we had about 35 percent of our products going overseas. The people that make the machining centers are not so lucky as we are. Now, we are out there taking advantage of that niche we have.

Yes, we have installed quality circles. Yes, we get our employees involved with the problems of the business. We are struggling very hard, but we are not unique. There are a whole bunch of other people trying, and when they try and they are in a target category, it is tough—very tough to survive.

Mr. **Mack**. Senator, you have talked earlier and throughout the discussion today about exports. NMTBA began in 1971 and has had since then a formalized association export promotion activity. We have at NMTBA three professionals who spend most of their time overseas trying to promote the export of the U.S. machine tools—helping to organize trade missions, participating in and encouraging members to participate in overseas trade shows, organizing our own trade shows and catalog shows, and trying to encourage more and more U.S. companies to engage in the export market. And that has been fairly successful.

One of the problems that we face in the export area, in addition to the very strenuous competition from our foreign competitors who have, frankly, been at it longer than we have and who regard exports, I think, with much more favor as a national policy than we do;

is the fact that about half of the consumption of machine tools outside of the United States is in the Communist countries. That is a phenomenon that is probably unique to the machine tool industry.

In 1981, the Soviet Union imported 1 billion dollars' worth of machine tools; $17 million of that came from the United States.

Most of it came from our allies who are presumably subject to the same kinds of restrictions on the export of high technology, militarily critical machine tools, as the United States is. We are all signators to CoCom, but we find many of our allies honoring the CoCom regulations in the breach rather than by respecting them and monitoring and controlling exports of their own nationals. Canada and the United Kingdom are probably the best of the CoCom allies in terms of respecting the CoCom regulations, which are mutually agreed upon.

Japan was pretty good for a number of years. Now they have actually countenanced not only the shipment of very highly sophisticated machine tools to the Soviet Union and the bloc countries but have actually countenanced licensing of the technology to make highly sophisticated machine tools by Hungary and by other bloc countries that are clearly on the CoCom list.

When they generate these sales over there, they don't just go out and buy champagne with the profits. They plow it back into R&D and they have got the economies of scale that those export sales bring them. And guess where the real brunt of that increased competitiveness ends up?

It ends up right back here in the United States. So we have, frankly, either imposed too stringent controls on ourselves or we have not done enough to encourage our allies to impose the same kinds of controls on their nationals. And we are reaping the whirlwind of that now, with respect to the import penetration of highly sophisticated machine tools in the United States.

Senator **Jepsen**. Along that line, has there been any major sector of the defense industry industrial base in which the use of imported machine tools is especially prevalent? Can you pinpoint it?

Are there any specific defense areas in which imported machine tools have taken over, so to speak?

Mr. **Arnold**. There is no publicly available information that identifies the end market for imported capital goods or any imports for that matter.

The only information that may be available which would differentiate imported machine tools in the aircraft industry or weapons and track vehicles would have to be provided from the insight that is available from individual domestic producers as they sense where their competition is.

Senator **Jepsen**. All right, we will approach it from another direction.

Are there any categories of machine tools that you know of from which we are foreign source dependent?

Mr. **Arnold**. Certainly, we are becoming very much that way in the machining centers, as Mr. Latona pointed out. The very major growth that occurred from the period 1978 and 1979 through the end of the really very strong market for machine tools was targeted toward the high value, high technology end of the market which was relatively smaller, so it is not only the most important part of the market from the perspective of defense production, but it is also the very rapidly growing market segment from which R&D expenditures can be derived.

Senator **Jepsen**. So on the basis of what Mr. Mack just said, we are finding ourselves in a real catch-22 situation here, where the Warsaw Pact nations are really moving along in high technology areas. Japan is increasing its market share by a rather substantial percentage every year and it sounds to me like we are becoming—whether we know it or not, foreign source dependent for a lot of categories of our machine tools.

Mr. **Latona**. Our figures, Senator, for machining centers we have found, although we have not directed the data with as much precision, but we have found that—we don't make lathes in any significant way, but we have found the data for numerically controlling computer-controlled lathes is roughly the same as ours in terms of the degree of penetration, and so on and so forth.

And somebody else would be able to speak to that with greater authority, but it is our impression from what we had seen that the situation in lathes is not significantly different and may be even a little bit worse.

As I said at the beginning, you know, we are unilaterally disarming ourselves in terms of our industrial base.

Mr. **Mack**. It is fascinating, by the way, Senator, that these various categories that we mentioned—machining centers, numerically controlled lathes, numerically controlled punching machines, electric discharging machines, which is a growing area of concern—are the heart of the so-called flexible manufacturing systems. They are the heart of what would be required to make highly sophisticated weapons systems.

They are also the heart of the commodity control list for the control of militarily critical machine tools for export to potential adversaries or, more correctly, the prevention of export of these items to potential military adversaries.

So the very equipment that we are on the verge of making ourselves foreign source dependent upon are also the items that we most stringently control for export purposes because they would be most likely to make a significant contribution to the military capability of our adversaries.

It is scary.

Senator **Jepsen**. In analyzing the importance of the machine tool industry to the defense industrial base, Mr. Arnold, you list three categories of machine tool purchases that have a direct bearing on defense production.

Are these categories and definitions the same as those used by the Department of Defense and other Federal agencies as they analyze the capacity versus requirements?

Mr. **Arnold**. In terms of measuring the dependence of defense on any one industrial sector. DOD typically reports two measures of their requirements—the direct and the indirect.

For any sector other than a capital sector, there is an exhaustive statement of demands that—for instance, something that is consumed typically in the years of purchase, like automobile tires, DOD would purchase automobile tires directly, and they would purchase them indirectly as a result of their procurement activity.

When it comes to capital goods, however, DOD has failed to account for the impact of their physical operation on demand for capital goods sales from their contractors. I work very closely with the analysts in the Department of Defense, and they don't debate that there is a third measure.

However, the numbers that the Department of Defense has reported, using the tools that DRI provides as well as those we maintain internally, account for just the first two measures, which are the direct and the indirect purchase of capital goods.

When they examine capacity and attempt to define what the capacity of the industrial base is, previous studies performed by the Defense Department as well as the Department of Commerce have differentiated the normal operating capacity of an industry, and that is loosely defined as the level the industry has made investment to obtain a profit maximizing level of output. They differentiated that from the engineering concept, which says, tell me how much can be produced if we have no constraints on both labor and the material side, which is a very heroic assumption.

This industry has a declining labor force due to changes in the production technology since about 1967. There is no assurance that that supply of skilled labor, which by some reports takes 4 to 6 years to develop on an individual case, would be available in the event of a war.

When we have looked at the engineering capacity of the industry, we assumed that labor can be redirected from some source, that by government fiat the required machinists to be able to produce machine tools will be supplied.

Even assuming those very heroic assumptions, that we know can never be attained, but probably with proper management could be somewhat approximated, the supply is still inadequate. The supply we have attempted to define is that which is both prescribed by Commerce in the direction for the preparation of the 232, but more important, it is the measure that the Industrial College of the Armed Forces, the Defense Mobilization Board, and other groups have attempted to examine with respect to industrial based preparedness.

Mr. Downer. Mr. Chairman, if I might just comment. The Defense Department, when I was still there, and even today is very much concerned about the machine tool industry and its ability to respond in an emergency.

In our country, I guess there is a tendency to look back in history at our response to World War II, "Rosy the Riverter" and everybody came out, and we suddenly expanded our capacity as the arsenal of democracy—and we can do it again if "the balloon goes up."

In the case of machine tools, some say, "Well, the defense requirements for the industry, using the definition that Mr. Arnold just explained, still are not the total capacity of the industry." And they tend to say, "Well, if an emergency comes, we will use the defense priority system; we will divert machine tools that are presently being used for nonessential civilian purposes, and we can meet our requirements."

Well, in World War II and in the Korean conflict, those two things happened, they diverted—they used the priority system. And in World War II the capacity of the industry had to expand approximately eight times to meet defense requirements, using that system.

Another point—DOD is presently making their industrial preparedness planning based on the assumption that they will not be able to get supplies of critical items from any country other than Canada, including machine tools, and this testimony has been given before Congress to that effect.

Another thing, to show you the concern for the machine tool industry, DOD, with the Federal Emergency Management Agency and the Department of Commerce, Recently instituted a program that is commonly known as the trigger order program.

Upon this program, the Defense Department identifies machine tools that they would need in an emergency. The commerce Department then writes an greement/contract with the machine tool company to produce *x* numbers of certain types of machine tools should an emergency come.

Those contracts are not executed unless the national emergency is declared. When it was declared you would—this is where it gets its name—you would trigger these contracts and the machine tool company could immediately start building.

Well, that is a very good program, and the Defense Department is presently contracting for over 2 billion dollars' worth of machine tools to satisfy this requirement. But the fallacy of it is, that unless there is a viable industry there to respond, the trigger order program is useless. And so, I feel that there is no question that the Defense Department recognizes the industry as a critical element of the whole defense production. The risk of foreign source dependency is very real, as Mr. Blakeman explained in his testimony.

Mr. **Blakeman**. The skilled workers, Senator Jepsen, are simply disappearing, as they have been laid off in the past 2 years. These skilled workers are going into computers and other sciences, and so the trigger order programs is a very admirable program, but there may not be industry there to respond.

Senator **Jepsen**. Are there any more comments or statements that any one of you would like to make before we close the hearing?

Mr. **Arnold**. Just one additional dimension that I might state to clarify our measures of demand that would be imposed—the demand for machine tools in the event of a large-scale mobilization.

In looking at these demands, we attempted to incorporate the austerity that the national emergency would impose on the civilian sector by reducing the consumption of consumer durable commodities— automobiles and other purchases—by individuals, which create a large demand, implied demand for machine tools.

We, for the war situation which we simulated in the latter part of this decade, we reduced real durable consumer consumption down to the 1967 level. The major demands for machine tools, in addition to those which have been identified for defense, result from the demands of an economy that is racing at a relative capacity across all dimensions.

Major end markets for machine tools itself is one of its major end markets, accounting for about 12 percent of total sales. So it has to produce a large number of machine tools just to produce excess machine tools for defense.

Certainly, transportation equipment, a sector that would be critical for an economy that has to function and meet the logistics demands, another 12 percent of the market, probably one that is by and large an essential civilian sector.

Farm machinery and construction and mining machinery generate critical sectors to produce the excess supplies that are required for nonconflict as well as to supply our allies, as we did in previous conflicts.

So these sectors, although they are identified as nondefense, arguably are critical, but without the detailed kind of planning document on the horizon that exists within the Joint Chiefs, we have no way to identify how much output would be anticipated in these sectors. But we have attempted to account for the market that can clearly be rationed.

Senator JEPSEN. If I might for the record then summarize this hearing.

On March 10, 1983, the Machine Tool Builders' Association filed a petition under section 232 of the Trade Expansion Act of 1982 with the Department of Commerce. The petition requested the executive branch provide relief to the industry in the form of import quotas of 17½ percent of domestic consumption for a period of 5 years in the interest of national security.

The filing of the 232 petition has raised a lot of questions in the international community, and action on it is being watched very closely. The thrust of the 232 process is to provide for the national security, and we have touched on that in this hearing today.

To date, there are 15 section 232 investigations that have been initiated. As I pointed out earlier, only two have resulted in action to limit imports, and both of these were involved with the petroleum industry.

The fact is that the U.S. machine tool industry has fallen on very hard times. In addition to being critical for our defense and industrial base, we find that on a constant-dollar basis the value of new orders in the machine tool industry placed in 1982 is one-half of the value of the orders placed in 1975, and that is the bottom of the previous business cycle.

The Commerce Department has ranked the machine tool industry last among 212 industry groups in its forecast of product shipments for 1983.

The rise of the Japanese imports has aggravated problems in the American machine tool industry. In 1971, imports from all countries comprised about 7 percent of the market share in this country. The 1976 share of the market owing to imports had risen 12 percent; in 1981, 36 percent of the market share went to imports. Since 1979, the Japanese share of the import market has increased 50 percent per year.

Now, members of the machine tool industry have made very compelling claims that the increase in the level of of Japanese imports is attributable to direct government subsidization and government coordination of the Japanese machine tool industry.

There is also strong evidence the Japanese are targeting high technology sectors of the machine tool industry, such as the numerically controlled machine tool producers who are the cutting edge of the industry. Japanese efforts to penetrate the U.S. market have been marked by massive stockpiling of machine tools in the United States, so that once demand begins to pick up, the Japanese will be able to offer their machine tools for immediate delivery. We are compounding the problem because American producers cannot afford the cost of carrying large inventories in these austere times.

The major issues that we have discussed in this hearing today include the following five areas:

We explored today the area of what the industry is doing to help itself.

We touched lightly on another area, which is what will the effect of the likely retaliation by other countries have on the domestic industry's hope for recovery if import quotas are imposed; that is, will there be a significant effect on U.S. exports to Third World countries if the U.S. import quotas force foreign machine tool producers to attempt to wrest a greater market share from U.S. exports?

The third area: The other alternatives that may exist for preserving the domestic industrial base besides import quotas, and the indepth analysis of those areas by the NMTBA.

The fourth area: The extent to which U.S. Government has aided the domestic machine tool industry.

And, fifth, there has been intensive discussion today on what categories of machine tool manufacturing capability are being displaced from the United States to overseas locations.

There are other areas that we touched on in some depth as well. They include exploring such questions as: Are there any categories of machine tools for which we are foreign-source dependent or moving in that direction?

Are there any additional areas or comments before we close the hearing?

Mr. **Blakeman.** Speaking on behalf of our association, I thank you for permitting us to come before you today. We appreciate your leadership in this area. It is obvious to us that there are a lot of people down here in Washington that are concerned about this problem. I just want to say for the record that I came down here today at my own expense to help in this program. I am concerned about the United States. I am concerned about its security in the future. I don't have any personal ax to grind.

It is high time that the people here in Washington wake up to the fact that we have got to protect ourselves, and we are simply pointing out as an industry that we are in jeopardy and if the imports continue to grow in certain categories of machine tools, we are going to be in a nonleverage position very shortly.

We thank you very much.

Senator **Jepsen.** Thank you, Mr. Blakeman, and I would point out for the record that your continued unselfish efforts, taken on your personal time and, at your personal expense, to come and testify and be concerned about the future, not only of the industry but our national security is a great testimony to you as an individual. It certainly lends a great deal of credibility to the case that your industry is setting forth here. Certainly, in your particular instance, you can't exactly be said to have your back against a financial wall. You have experienced some considerable financial success in this industry, which gives even more credibility to your efforts on its behalf.

I thank you all for coming, and I assure you that the results of this hearing and the information supplied to us today will be introduced to those who are reviewing your application in the various departments. Trade, Commerce, and others, not the least of which is Defense, that have a direct interest in this issue.

Thank you.

The committee is adjourned.

[Whereupon, at 11:40 a.m., the committee adjourned, subject to the call of the Chair.]

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